EMC® Document Sciences® xAdmin

Version 4.5 SP1

User Guide

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Revision History

Revision Date	Description
August, 2015	Updated System Environment Variables, page 122.
May, 2015	Removed the “Java Editor Configuration” section because xPression does not support it any more.
January, 2015	Updated Sorting, page 238 and Grouping, page 239. Updated Adding Comments to Your Output File, page 232.
June, 2014	Initial publication

Chapter 1

Introduction

Welcome to the xAdmin User Guide. This book introduces you to xAdmin, tells you how to get started, and covers all of the xAdmin features in-depth.

Information Boxes

The following colored boxes alert you to special information in the documentation.

Caution: The caution box warns you that a fatal error, unsatisfactory output, or loss of data may occur if you do not follow the directions carefully.

Tip: A tip offers suggestions to simplify a task or describes a useful shortcut. They may also describe an alternate way to use the techniques described in the text.

Note: A note offers information that emphasizes or supplements important points of the main text.

EMC Document Sciences Technical Support

For more information or to solve a problem, contact EMC Document Sciences Technical Support:

Online Support: https://support.emc.com

Telephone Support:

United States: 800-782-4362
Canada: 800-543-4782
Worldwide: +1-508-497-7901

For additional worldwide access numbers, visit:

http://www.emc.com/collateral/contact-us/h4165-csc-phonelist-ho.pdf

Chapter 2

Getting Started with xAdmin

In this chapter we will introduce you to xAdmin and show you how to get started. First, you need to log in and set up your license. We'll walk you through those steps, then take a tour of the application.

Introduction to xAdmin

xAdmin is the browser-based administration console that enables you to easily configure and maintain all aspects of the xPression system from any Web-enabled client connected to your network. As the system administrator, xAdmin will be the tool you use to administer your xPression environment.

xAdmin organizes administrative tasks into six menus located on the xAdmin menu. From these menus you can organize similar documents into categories, administer your data sources, create sets of attributes on which to qualify your documents for assembly, manage resources like images and fonts, define your output format, configure printer settings, create output scenarios, migrate documents, and administer your server.

Note: A user's access to each menu is determined by their role. If you have not been granted access to a specific area, you will not see that area in the xAdmin interface. For more information, see Roles, page 317.

xAdmin does not support concurrent users. While more than one user may log in to xAdmin, it is not recommended because changes made by one user could overwrite the changes made by another concurrent user.

xAdmin Users

In order to access xAdmin, you must be defined as an xAdmin user. As an xAdmin user, you will be granted access to specific areas of the xAdmin and xDashboard interfaces. When you log into xAdmin or xDashboard, you will only see the areas of the interface to which you have been granted access.

The xPression super administrator user has access to all the areas of the xAdmin interface, and has the ability to create xAdmin users, and to grant access to those users. For more information, see Chapter 13, User Management.

If you are unable to access xAdmin, or you do not see an area of the interface that you need to access, please contact your xPression administrator.

Logging On to xAdmin

You can access xAdmin from any web-enabled browser connected to your network. The URL that you use to access xAdmin is set up as follows:

***Servername*:*PortNumber*/xAdmin/html/index.jsp**
For example:

http://MyServer:9081/xAdmin/html/index.jsp

This URL will access the xAdmin start page. If your system administrator has enabled security on xAdmin, you will be forced to log on before the start page appears.

Supply xPression License

If this is your first time accessing xAdmin, you will be prompted to supply your license in the License Management page. You can enter new license files through **License Management**.

When your license expires, or if you upgrade your license to include additional seats, you'll be directed to supply a new license file in the **Enter New License** box. New users will receive their license file (license.xml) through an email from EMC Licensing.

To update your license with a new license key file:

1. Click **System Management**.
2. Click **License Management**.
3. Click **Browse**. Locate and select the license key file (license.xml) provided to you by EMC Licensing.
4. Click **Open**. The file path appears in the Select License File field.
5. Click **Save**.

Note: If you are using Microsoft Internet Explorer 8, you will not be allowed to type a path directly into the Enter New License field; you must use the browse button to locate the file.

The xAdmin Interface

Once you are logged in to xAdmin, you are presented with the xAdmin menu page. From this page you can access any of the xAdmin menus. The default xAdmin menu page contains the following menus:

- Category Management, page 23
- Resource Management, page 23
- xPublish Output Management, page 24
- Utilities, page 26
- Supportability Tools, page 26

- System Management, page 27
- User Management, page 27

You may not see all of these menus in the interface; you will only see those menus to which you have been given access. To gain access to a specific menu area, see your system administrator. For more information about user access in general, see User Management, page 27.

Category Management

The Category management menu enables you to manage your data sources and attribute sets, as well as your categories. In addition to categories, the Category Management menu enables you to configure attributes and data sources.

- **Categories** — The entire xPression document creation process is centered on categories. Simply put, categories are the organizational containers for your documents, holding documents that share similar subject matter. For example, you might have categories for Auto policies, Health and Life policies, and customer correspondence. Documents that share similar subject matter will also share data sources, attributes, user permissions, and other settings.
- **Attributes** — Attributes enable you to associate information with a content item. You can then use this information to create business logic for a document by mapping fields from your data source to your attributes. Examples of typical attributes are effective date, jurisdiction, status, and form number. Attributes are also used to track and manage document states during the approval process. Attributes are organized into attribute sets.
- **Customer Data Sources** — The data source contains data about the entity for which a document will be generated, typically a customer. Data sources are organized into data source groups. Data source groups define the schema or structure for the data.
- **Life Cycle** — The xPression Lifecycle feature enables you to connect your xPression document design process to a Documentum work flow.

You may not see all of these submenus; you will only see those menus to which you have been given access. To gain access to a specific menu area, see your system administrator. For more information about user access in general, see User Management, page 27.

Resource Management

Resource management contains the xPression image utility, font utility, and your output variable definitions.

- **Document Property Sets** — Document property sets are groups of document properties that can be shared between xPresso for Adobe InDesign, xPresso for Word 2007, and xPresso for Dreamweaver documents.

  The Document Property Sets area enables you to view document property sets exported from xPresso design clients and stored on the xPression Server. The information about the document property sets is read-only and can not be modified in xAdmin.
- **Variable Definition Sets** — xPresso variable definitions define variable information in an xPresso document. Variable definition sets are groups of xPresso variable definitions that can be shared

between xPresso for Adobe InDesign, xPresso for Word 2007, and xPresso for Dreamweaver documents.

The Variable Definition Sets area enables you to view variable definition sets exported from xPresso design clients and currently stored on the xPression Server. The information about the variable definition sets is read-only and can not be modified in xAdmin.

- **Output Variable**s — Output variables define all global variables that can be used in the definition of output streams and distribution profiles. They can be mapped to customer data from each of your data sources. This enables you to use the same variable, for example, Email_Address, in all of your output scenarios for all of your documents.
- **Image Utility** — The image utility manages the images for your xPublish documents, and enables you to import images, delete images, and modify the image properties.
- **Font Utility** — The xPression font utility enables you to manually import, update, or remove fonts from your content repository.
- **ECM Configuration** — ECM Configuration works in conjunction with ECM Server, page 135 to enable xPression to integrate with your ECM system. xPression supports two ECM systems, Documentum and Filenet.
- **ECM Server** — ECM Server works in conjunction with ECM Configuration, page 131 to enable xPression to integrate with your Filenet ECM system.
- **User Exit Management** — Register your user exits with xPression by identifying them here.
- **xEditor Configuration** — xEditor configuration enables you to set up configurations for your xEditor implementations. You can new configurations for any custom application you develop with the IDDK web services.

You may not see all of these submenus; you will only see those menus to which you have been given access. To gain access to a specific menu area, see your system administrator. For more information about user access in general, see User Management, page 27.

xPublish Output Management

The xPublish Output Management section contains settings for your output devices, output format choices, printer functions, barcode and content stamps, output streams, distribution definitions, and output profiles. The xPublish Output Management menu contains the following menus.

- **Printer Definition** — Printer definitions enable you to configure your output devices by specifying settings for your printer and identifying printer resident images. Printer definitions work side-by-side with Marker Definitions to provide a mechanism for implementing device features for output streams and documents. This enables you to select media (tray pulls), operate finishing options (stapling, jogging, etc) and control other device specific features such as device resolution, screens, watermarks and more.

  Printer definitions use your print device PPD file to identify all of the features and settings supported by the device. Markers identify places in the document where you would like to implement a feature or set of features. For more information, see Printer Definitions, page 148.
- **Marker Definition** — Markers work side-by-side with printer definitions to provide a mechanism for implementing device features for output streams and documents. By themselves, markers do not identify or implement any of these features. A marker is simply a name that can be placed (as

a mark) in a document or an output stream. Each printer definition enables you to map markers to your print device features. Markers operate independently from your devices, which enables you to use one marker to implement a feature through different devices using different methods. For more information, see Marker Definitions, page 153.

- **Content Stamp Definition** — Content stamps enable you to apply barcodes, images, and text strings directly to your documents after composition. Content stamps can be applied to a fixed location on the document without affecting the composition of the document. Stamps usually consist of variable format, but may include static content. You can even set the z-order of the stamp so that it appears as a foreground item or a background item. For more information, see Content Stamp Definitions, page 161.
- **Separator Sheet Definition** — Separator sheets are user defined sheets that are inserted into print streams in order to differentiate groups of physical pages. Separator sheets help ensure that groups of physical pages can be easily identified and managed by human operators. They are created by xPression during the assembly process and are not a component of the input document stream.

  You can place image, barcode, and text content stamps on your separator sheets. Additionally, you can use markers with your separator sheets to pull them from a specific paper tray. For more information, see Separator Sheet Definitions, page 183.
- **Imposition Definition** — xPublish supports multiple imposition which places multiple logical pages on a single sheet. xPublish supports three types of multiple imposition: 2 Up Booklet Imposition, N Up Sequential Imposition, and N Up Stacked Imposition. For more information, see Imposition Definitions, page 188.
- **Postal Processing Definition** — Postal processing definitions enable seamless integration into a complex and multi-step computer-automated and physical-handling process. Postal processing definitions are included in an output stream definition.

  Currently, xPression supports interfacing with Satori Software's Bulk Mailer volume mailing preparation software; however, you can also interface with any postal processing software that supports "command line" operation, and comma delimited input and output files.
- **Output Definition** — Output definitions specify settings for a specific output format that you can associate with an existing output device. xPression comes with three hard-coded output definitions that cannot be customized or altered, these default definitions are: DOCX, Packed MSOHTML, and Web Archive. These default definitions do not appear in the output definition list, but they are available when constructing your output profiles.

  You can create customized output definitions for the following output formats: AFP, HTML, PostScript, PCL, Text, PDF, and TIFF. All output formats appear in the output definition list for output profiles. For more information, see Printer Definitions, page 148.
- **Stream Definition** — An Output Stream is a collection of assembled documents with similar publishing and distribution criteria. xPression uses output streams to distribute documents by combining them with an output definition and a distribution definition in an output profile.

  Output streams are the method xPression uses to place documents into your output management settings. You can also associate markers, recipients, crop marks, and content stamps with your output stream. For more information, see Content Stamp Definitions, page 161.
- **Distribution Definition** — An xPublish distribution definition defines settings for operating a specific e-mail server, print output device, or archive system. You must create a distribution definition for each distribution method you intend to use. The distribution definition page contains a General and a Distribution Options tab. The General tab contains information about

how you want to distribute the document. The Distribution Options tab contains settings specific to your output device. For more information, see Distribution Definitions, page 244.

- **Output Profiles** — xPublish output profiles tie together all your output settings into one profile. They publish a selection of documents (determined by the output stream) in a specific format (defined in an output definition) through a specific distribution method (as defined in a distribution definition). For more information, see Output Profiles, page 264

You may not see all of these submenus; you will only see those menus to which you have been given access. To gain access to a specific menu area, see your system administrator. For more information about user access in general, see User Management, page 27.

Utilities

The Utilities enable you to import, export, and migrate documents, output profiles, and job definitions. The Utilities can migrate xPression documents and xPresso packages.

When migrating, you move these items directly from one xPression environment to another. When exporting, you are packaging your items into a Portable Document Package (PDPX) and saving it to a network location. When importing, you are retrieving a PDP from a network location.

The Utilities have the following functions:

- **Import** — The Import feature imports your documents, job definitions, output profiles, xEditor configurations, Quick-Pick definitions, and channel definitions from a network location and places them in your target environment. You can run Import from the xAdmin interface or through the command line.
- **Export** — The Export feature packages your selected documents, output profiles, jobs, xEditor configurations, Quick-Pick definitions, and channel definitions and exports them to a network location. You can run Export from the xAdmin interface or through the command line.
- **Migrate** — The Migrate feature packages your selected documents, job definitions, output profiles, xEditor configurations, Quick-Pick definitions, and channel definitions from your source server and imports them to your target server. Use this method when you want to immediately migrate items from one xPression server to another and good connectivity exists between the servers.

For more information, see Chapter 10, Utilities.

You may not see all of these submenus; you will only see those menus to which you have been given access. To gain access to a specific menu area, see your system administrator. For more information about user access in general, see User Management, page 27.

Supportability Tools

Note: You can only use Supportability tools under the direction of EMC Document Sciences Technical Support representatives.

The Supportability Tools page is available if you have a license for xRevise or IDDK only. Supportability tools are used to import, export, and purge xRevise and IDDK workitems from the xPression database.

Work items are exported and imported in PDPX format. Work items can be purged automatically when exporting if desired, and manually as required.

Supportability tools have the following functions:

- **Import** — The Import feature imports your work items from a network location and places them in your target environment. You can run Import from the xAdmin interface or through the command line.
- **Export** — The Export feature packages your selected work items and exports them to a network location.
- **Purge** — Purge enables the administrator to clear work items from the xPression database. This is primarily used to recover storage space for new work items, and to eliminate obsolete work.

For more information, see Chapter 11, Supportability Tools

You may not see all of these submenus; you will only see those menus to which you have been given access. To gain access to a specific menu area, see your system administrator. For more information about user access in general, see User Management, page 27.

System Management

System management enables you to configure locales and manage your xPression Server license .

- **Locales** — Locale is a setting that xPression uses to apply specific regional date and numeric formatting to the variable replacement fields that xDesign users insert into their documents. For more information on Locales, see Locales, page 311.
- **License Management** — This section enables you to update or change your xPression license information. For more information, see License Management, page 313.
- **CheckVersion Utility** — The CheckVersion utility gathers relevant information about your xPression environment and packages this information for your EMC Document Sciences representative.

You may not see all of these submenus; you will only see those menus to which you have been given access. To gain access to a specific menu area, see your system administrator. For more information about user access in general, see User Management, page 27.

User Management

User management enables you to define user roles, assign users to roles, and manage user passwords.

- **Roles** — This section enables you to define specific user roles, by specifying the areas of the interface to which they can have access. For more information, see .
- **Users** — This section enables you to add users to xAdmin and assign a role, or access rights to areas in the interface. For more information, see .
- **Change Password** — This section enables the super administrator user to change their password. This area is only accessible to the super administrator user. For other users, see your xPression administrator to change your password.

You may not see all of these submenus; you will only see those menus to which you have been given access. To gain access to a specific menu area, see your system administrator.

For more information, see User Management, page 27.

Login on to xDashboard from xAdmin

You can log on to xDashboard directly from xAdmin. The link appears in the top-right corner of the page. If you use JBoss or WebSphere, you must provide your user name and password when login on to xDashboard. If you use Weblogic, you do not have to supply a user name and password, but you will not be able to log off of xDashboard until you log off of xAdmin.

xPressionHome

The term “xPressionHome” refers to the location where xPression was installed on your server. By default on Windows servers, the location is C:\xPression, but your installer may have selected a different location during installation. Please consult with your administrators or IT personnel to determine the location where they installed xPression. Throughout the xPression documentation, we will refer to this location as “xPressionHome”.

Chapter 3

How to Use xAdmin

This section takes a high-level look at the procedures you should follow when configuring your settings in xAdmin. After logging in and setting up your license as shown in Supply xPression License, page 22, you need to complete the following three steps before you can begin creating categories: Step One: Set Up Locales, page 29, Step Two: Set Up Attribute Sets, page 29, and Step Three: Set Up Data Sources, page 30.

Step One: Set Up Locales

Locales are optional settings that help make your documents understandable across international, regional, and cultural borders. A locale's main function is to apply regional date and numeric formatting to your variable data.

When you set up locales on your system, ensure that you set up at least one locale for each geographic area that requires region specific formatting. Also, ensure you set up at least one locale for each language you publish your documents in. To more clearly define your formatting to specific regions, xPression enables you to associate one or more locales with a language.

First, review the locale documentation in the Locales, page 311 section of the System Management chapter. Next, create your locales using the steps listed in Creating Locales, page 312.

Step Two: Set Up Attribute Sets

Attributes enable you to use fields from your customer data for evaluating business rules and logic. xPression attributes define how your customer data should, and will, be used by document designers to produce personalized documents.

When xPression processes a document, it automatically evaluates your customer records against a customizable set of attributes and selects the qualifying customer records. The automatic nature of this evaluation relieves you from the burden of building custom logic for each of your documents.

All attributes are created through and organized by attribute sets. There can only be one defined attribute set for each category, but many categories may use the same attribute set. xPression attributes support the following data types of data: Integer, String, and Date.

You must create your attribute sets before you begin creating your categories because each category must contain a single attribute set. You can update your attribute sets with new attributes at any

time, but use caution while doing so. Changes made to an attribute set affect all categories that use the attribute set.

First, review the attribute set documentation in Chapter 5, Category Management: Attributes. Next, create your attributes and attribute sets as shown in Creating an Attribute Set, page 75 and Creating a New Attribute, page 77.

Step Three: Set Up Data Sources

A *data source* is the customer data used to create documents in xPression. xPression accepts XML, relational database, and Stylus Studio transformation data sources.

A *data source group* defines the schema, or structure, of one or more xPression data sources. All data sources within a given data source group must share the same schema. Schemas identify the objects, properties, and relationships of the data. xPression has been designed to use the most common database structure, the relational database table and column structure, as its basis for the schema definition. This design enables you to use several different data sources interchangeably.

Data sources can be complex and set up in many different ways. Please read the entire Chapter 6, Category Management: Data Sources chapter to properly configure your xPression customer data. Next, create a data source group as shown in Data Source Group Options, page 90. When your data source group is created, add a data source to the data source group as shown in Adding a Relational Data Source to a Data Source Group, page 95.

If you are publishing xPresso documents, data source setup is a little different. For more information, see Setting Up xPresso Documents, page 37.

Step Four: Setting Up Categories

xPression uses the concept of categories to store and organize your many types of documents. Think of a category as a container where you store information of a similar nature. For example, you might have a single category for all of your Auto policies because those policies use similar data, require a similar workflow, and use similar or identical access rights. In short, categories are collections of documents with similar needs and similar uses. All documents reside in one category or another.

When an xDesign user accesses a document, they are first asked to select the category that contains the document. Categories also contain a number of settings that apply to all documents in the category. Applying these settings once to a category is much more efficient than applying and re-applying them to each individual document. First, review the category documentation in Chapter 4, Category Management: Categories. Next, create your categories as shown in Creating a Category, page 44.

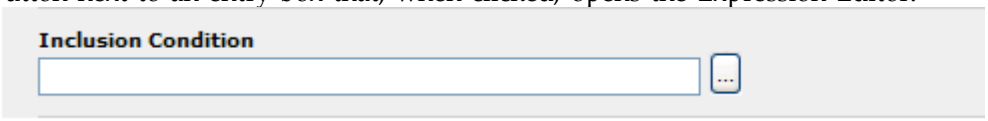
If you are publishing xPresso documents, category setup is a little different. For more information, see Setting Up xPresso Documents, page 37.

Step Five: Configuring Your Publishing Environment

The xPression publishers are responsible for formatting and distributing assembled documents according to the specifications of the document designer. They also perform any required post-composition processing that groups documents into streams, adds finishing information, and distributes the final documents to the designated output format. For more information about xPublish Output Management, see Chapter 9, xPublish Output Management.

Working with the Expression Editor

On many of the pages that you will work with in xAdmin, you will see a browse button next to an entry box that, when clicked, opens the Expression Editor.



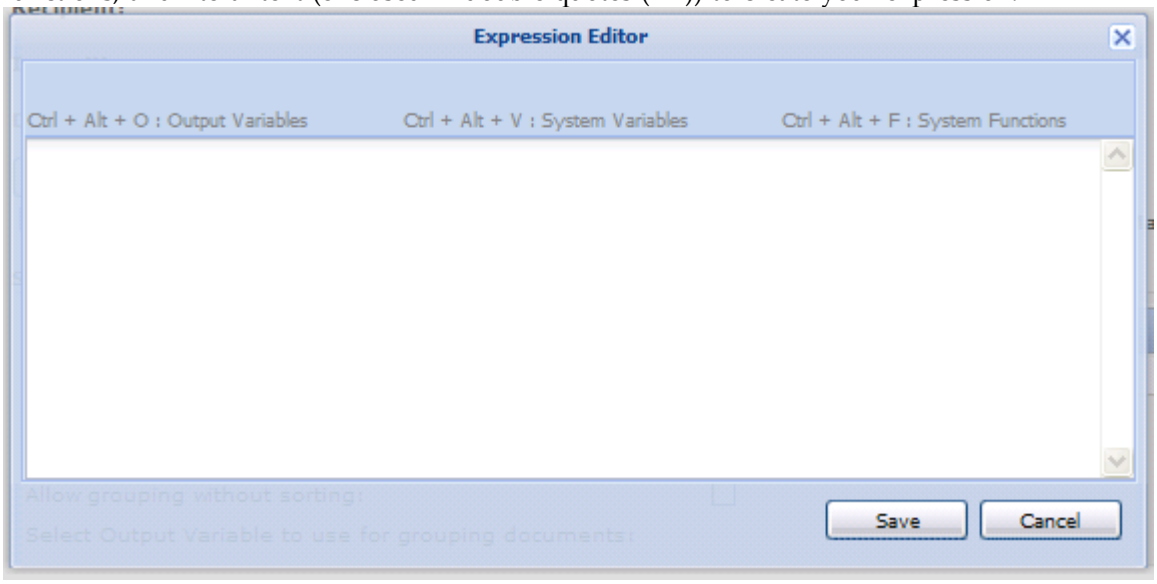
The function appears for many expression entry boxes. The Expression Editor feature enables you to create complex and customized expressions. All data expressions must be formed as String type expressions. When creating your expression, ensure you compare numbers to number variables and strings to string variables. If you do not match the data type while doing comparisons, you will get incorrect results. You can create an expression in the edit box on the page, and then modify it in the Expression Editor, or you can create the expression entirely in the Expression Editor.

Note: Expressions created in the Expression Editor, or entered on any page are not validated by xAdmin. You must ensure that your expression is valid to avoid errors during publishing.

The Expression Editor Interface

The main part of the Expression Editor dialog box is the Content Expression edit box, which enables you to define an expression that will generate a value for the specific option. You can use output variables, system variables, system

functions, and literal text (enclosed in double quotes (“ ”)) to create your expression.



For a list of supported operators, see Supported Operators, page 36. Specific key combinations help you to build your expression:

- **Ctrl+Alt+O**. Displays a drop-down list of output variables defined on the server. Select the variable you want to include and it will appear at the location of the cursor. For more information, see Output Variables, page 119.
- **Ctrl+Alt+V**. Displays a drop-down list of system variables. Select the system variable that you want to include, and it will appear at the location of the cursor. For more information, see Appendix B, System Function Definitions.

  Not all system variables are useful in every situation. xPression doesn’t limit the use of system variables; all variables are available for selection all the time. Ensure that the system variable you insert is useful for the specific situation. System variables are meaningless in HTML output.
- **Ctrl+Alt+F**. Displays a drop-down list of system functions. Select the function that you want to include, and it will appear at the location of the cursor. For more information, see Appendix B, System Function Definitions.

Note: On some non-English keyboards, these key combinations may be reserved for other uses. Use an English keyboard to avoid this issue.

You can manually type the text for your output variables, system variables, and system functions instead of selecting them from the drop-down lists. When typing text for output variables, ensure that you use the following syntax {$variableName}. A dollar sign ($) must precede the variable. No spaces or other characters are allowed between the dollar sign and the variable name.

The Save button on the dialog box saves your expression, and returns you to the previous page in xAdmin. The Cancel button returns to the previous page without saving any of the changes made in the Expression Editor.

Page and Document Condition Options

xPression keeps track of information at four levels of use: document, package, partition, and stream. xPression knows all information about the package at the package level, such as totals. It does not know any totals for the partition or stream level unless processing has completed. Therefore, you must be aware when using system functions that relate to totals for the partition and stream level, that they should occur at the end of that level, such as in an "End of" separator sheet. Those variables will typically have a current count value when not used at the end of the particular level to which they pertain.

There are other system functions that can be used at any time, and will have a valid value, such as PartitionNo (partition number) and date and time system functions.

Package level totals are known at the time the package is resolved, which occurs before the inclusion condition of the package for the stream. Therefore, totals relating the package can be reliably used for both conditions and data for the package.

Keeping all this in mind, be sure to select functions that are appropriate for your situation when creating your expression. For example, the TotalPagesInPartition function will not return meaningful data when used in a package. It will return meaningful data when used at the end of a partition-level separator sheet.

The functions names available for selection through the interface are named for clarity, and may not match the actual function name exactly. If you are using the Advanced Expression Entry dialog box, you must use the true name of the function (listed in Appendix B, System Function Definitions). You can add the following built-in functions to your Page Condition:

Default

- Now
- Current Date
- Current Date Time
- Current Time Millis
- Unique Number
- Current Plex
- Is Recto Page
- Is Verso Page
- Is Inserted Blank Page
- Current Page Orientation
- Total Pages in Package

Document Level Functions

- Total Pages in Document
- Total Recto Pages in Document
- Total Verso Pages in Document
- Total Sheets in Document

- Total Blank Pages Inserted in Document
- Total Simulate Blank Pages Inserted in Document
- Current Page Includes Simulate Document
- Current Page in Document
- Current Sheet in Document
- Current Recto Page in Document
- Current Verso Page in Document
- Current Inserted Blank Pages in Document

Package Level Functions

- Current Document in Package
- Current Page in Package
- Current Recto Page in Package
- Current Verso Page in Package
- Current Sheet in Package
- Is Last Document of Package
- Is First Page of Package
- Is First Recto Page of Package
- Is First Verso Page of Package
- Is Last Page of Package
- Is Last Recto Page of Package
- Is Last Verso Page of Package
- Total Pages in Package
- Total Recto Pages in Package
- Total Verso Pages in Package
- Total Sheets in Package
- Total Blank Pages Inserted in Package
- Total Simulate Blank Pages Inserted in Package
- Total Package Weight (g)
- Total Package Thickness (mm)
- Current Inserted Blank Pages in Package

Partition Level Functions

- Total Pages in Partition
- Total Recto Pages in Partition
- Total Verso Pages in Partition

- Total Sheets in Partition
- Total Blank Pages Inserted in Partition
- Total Simulate Blank Pages Inserted in Partition
- Current Package in Partition
- Current Document in Partition
- Current Page in Partition
- Current Recto Page in Partition
- Current Verso Page in Partition
- Current Sheet in Partition
- Partition Output File Name
- Total Separator Sheets in Partition
- Current Separator Sheet in Partition
- Current Inserted Blank Pages in Partition
- Total Imposed Sheets in Partition
- Current Imposed Sheets in Partition
- Total Stack in Partition
- Current Stack in Partition
- Total Imposed Pages in Partition
- Current Imposed Pages in Partition
- Total Recto Imposed Pages in Partition
- Total Verso Imposed Pages in Partition

Stream Level Functions

- Current Stream Plex
- Partition No
- Current Package in Stream
- Current Document in Stream
- Current Page in Stream
- Current Recto Page in Stream
- Current Verso Page in Stream
- Current Sheet in Stream
- Total Partitions in Stream
- Total Pages in Stream
- Total Blank Pages Inserted in Stream
- Total Sheets in Stream

- Total Separator Sheets in Stream
- Current Separator Sheet in Stream
- Total Simulate Blank Pages Inserted in Stream
- Total Recto Pages in Stream
- Total Verso Pages in Stream
- Current Inserted Blank Pages in Stream
- Total Imposed Sheets in Stream
- Current Imposed Sheets in Stream
- Total Stack in Stream
- Current Stack in Stream
- Total Imposed Pages in Stream
- Current Imposed Pages in Stream
- Total Recto Imposed Pages in Stream
- Total Verso Imposed Pages in Stream

Refer to System Functions for specific information about all of the functions.

Supported Operators

You can use the following operators in your expressions.

Symbol	Definition	Symbol	Definition
*	Times	!	NOT
/	Divide	=	Equal (string and numeric)
%	Modulous	!=	Not equal (string and numeric)
+	Plus	>	Greater than
-	Minus	<	Less than
(	Open parentheses	>=	Greater than or equal to
)	Close parentheses	<=	Less than or equal to
&&	AND	+	String concatenation
||	OR		

Using the xPression Batch Parameter

When defining your output file name in xAdmin, you have the option to use the *batch parameter*. The batch parameter is a user-defined variable that receives its value when the batch job is executed.

When inserted into the output file name definition, the batch parameter acts as a placeholder. When executing a batch job from xDashboard or from the command line, the user has an opportunity to supply a value for this placeholder. When used, this value will also be applied to the batch log for the batch run.

For example, if you define your output file name as "<BatchParameter>_output" and supply "InsurancePol" as batch parameter when executing the batch job, your output file name will be "InsurancePol_output".

For information about defining the value for the batch parameter while executing the batch job from the command line, see the *Batch Processing Guide*. For information about defining the value for the batch parameter while executing the batch job from xDashboard, see the *xDashboard User Guide*.

Setting Up xPresso Documents

The process for publishing xPresso documents is a little different from publishing non-xPresso documents. This section details the process of working with xPresso documents. xPresso documents are referred to as packages. Prior to xPression 4.0 all xPresso packages used the .pkg extension. This extension is still supported for old packages, but any new packages created through an xPresso client application will contain an extension identifying the design tool that created it.

- .xindd (xPresso for Adobe InDesign package)
- .xword (xPresso for Word 2007 package)
- .xdrwv (xPresso for Dreamweaver package)

Preliminary Set Up Steps

Before starting xAdmin, you must copy some of your xPresso file to locations where they can be found by xAdmin. These steps ensure that the necessary files will display as selectable items in the xAdmin user interface.

1. Copy your xPresso XML customer data file to the following location on the xPression Server:

`<xPressionHome>/CustomerData/`

2. Copy the XSD file for the document to the following location in the xPression Server:

`<xPressionHome>/CustomerData/Schema/`

3. Copy the xPresso package file for the document to any location in the xPression Server. Ensure you remember the location because you must import the xPresso package from this location in a later step.
4. Copy the fonts used in the document to:

`<xPressionHome>/Publish/FontCache/`

5. Copy images used in the document to any location on the xPression Server. The location needs to be identified as a path in the xml data file for the given image variable. For example:

```
<Documentimages>
   <imagevariable1>C:/images/Cat.jpg</imagevariable1 >
```

```
<imagevariable2>C:/images/box.jpg</imagevariable2 >
</Documentimages>
```

Setting Up an Attribute Set

See Creating an Attribute Set, page 75 for instructions on creating an attribute set. Ensure that your attribute contains your xPresso application name in the “Apply Attribute Set to the Following Applications” list.

Setting Up a Category

xPression uses the concept of categories to store and organize your many types of documents. Think of a category as a container where you store information of a similar nature. For example, you might have a single category for all of your Auto policies because those policies use similar data, require a similar workflow, and use similar or identical access rights. In short, categories are collections of documents with similar needs and similar uses. All documents reside in one category or another.

To set up a category:

1. Start xAdmin and click **Category Management**.
2. Under Category Management, click **Categories**. A list of existing categories appears.
3. Click **Add**. The Category definition page appears. Across the top of the page you will see a series of tabs. The General tab is active by default.
4. On the General tab, type a name for your category. The name can have up to 255 alphanumeric characters. You may include spaces in your category name, but the category name may not consist of only spaces.
5. Define an attribute set for your category. Ensure that the attribute set is associated with your xPresso application. Defining an attribute set enables the following for the xPresso documents in the category:
   - Check in and check out
   - Use as universal content
   - Configure user access privileges on the category
6. In the Applications section, select **xPression Batch**. Leave the other options unselected.
7. Click **Save**.

Deploy the xPresso Schema

In this step you will set up xAdmin with the XSD file you previously copied to the xPression Server.

1. Under Category Management, click **Customer Data Sources**.
2. Click **Add xPresso Data Source Group**. The Add xPresso Data Source Group button is the second button from the left on the menu bar.
3. Type a name for the xPresso data source group. The name must be 1-255 alphanumeric characters in length. Parentheses, apostrophes, and quotation marks are not supported.
4. Select the location of the schema file: **From Server**, or **From Local Machine**.
5. Click **Select File** to locate the schema file.

   If you selected From Server, a window appears containing a list of all the schema files currently stored on the server. Select the file and click **Open**.

   If you selected From Local Machine, the Windows Choose File dialog box appears. Browse to locate and select the schema file, and click **Open**.
6. Type the xPath for the delimiter of the schema file. The delimiter is the highest repeating record in the file, which separates the XML into separate customer records. The xPath should follow xPath specifications. For example, /CustomerData/Customer
7. Type the key for the xPath. The key uniquely identifies a customer record. For example, /CustomerData/Customer/AccountNumber. The xPath should follow xPath specifications, and can use xPath functions. For example, /CustomerData/Customer/concat(lastName, " ", firstName).
8. Click **Save**.

Deploy the XML File

In this step you will set up xAdmin with the XML file you previously copied to the xPression Server.

1. Under Category Management, click **Customer Data Sources**.
2. Click **Add Data Source**.
3. In the Name box, type a name for the data source. The name does not have to match the XML file name.
4. Select **File** from the XML Source drop-down list.
5. Type the location of your data source. The path to your data source is case sensitive. xPression supports UNC naming conventions. In the preliminary steps, you copied this file to the following location on your xPression Server:

<xPressionHome>/CustomerData/

6. Click **Save**.

Deploy the xPresso Package File

In this step you will import the xPresso package file you previously copied to a location on the xPression Server.

1. From the left side of the xAdmin page, click **Utilities**.
2. Under Utilities, click **Import**.
3. In the PDP Location section, select **The PDPX is on the client side**.
4. In the PDP Path section, click Browse and navigate to the location where you copied your xPresso package file. If you want to import additional packages, documents, job definitions, or output profiles, click Add to add a new line.
5. When you have defined all of the packages or PDPX files that you want to import, click **Start**.
6. xPression displays a new page that enables you to selected a destination category for your xPresso package. This page enables you to select target categories for all packages or PDPX files you are importing.

   Select the category that contains your xPresso data source and click **Start**.
7. xAdmin displays a message indicating that your import was successful.

Configure Your xPresso Data Sources

In this section, you will configure the data sources you deployed on the xPresso Category you set up in Setting Up a Category, page 38.

1. From the left side of the xAdmin page, click **Category Management**.

2. Under Category Management, click **Categories**.
3. Click the xPresso category you defined in Setting Up a Category, page 38.
4. Click the **Data Sources** tab.
5. Click **Add Group**.
6. The Data Source Group you defined in Deploy the xPresso Schema, page 39 will appear in Available Groups box. Select the group and click **Add**. The group will move to the Associated Groups box, indicating that the data source group is now associated with the category.
7. Click **Save**.
8. The data source group should now appear in the Group / Data Source list. Select the check box next to the data source group name, and click **Set Primary**.

Determining Where Your Output Resides

Distribution Definitions contain the setting that determines where you output will be stored after publishing. To determine where you output will be stored:

1. From the left side of the xAdmin page, click **Publish Output Management**.
2. Under Publish Output Management, click **Distribution Definitions**. The Distribution Definition list appears.
3. Click the Distribution Definition that will be used to create your output.
4. Click the **Distribution Options** tab.
5. Locate the **Output Directory for Print Files** box. This box contains the path to your output directory.

About xPresso Output Variables

xPresso output variables names must match a document property name contained in an xPresso document, which is then mapped to your data source through a variable definition in your document.

When defining output variables in xAdmin, ensure they are named exactly as the document property names in the xPresso package file. If you click the document name on the category Document List tab, a list of document properties contained in the document displays. The names are case-sensitive and fully matching.

XML data node names must exactly match schema node names in case and formatting as defined in the xPresso client.

Once you define an output variable in xAdmin, you can use that variable in your output processing definitions and tasks. The variable will be available from the Output Variable drop-down list for each option that accepts one as input.

Chapter 4

Category Management: Categories

This chapter examines the Categories submenu of Category Management. If you do not see this submenu in the xAdmin interface, you do not have permission to access it. See your xPression administrator for access. The Attributes submenu is documented in Chapter 5, Category Management: Attributes and the Data Sources submenu is documented in Chapter 6, Category Management: Data Sources.

The Category Management menu contains all of the options necessary for configuring your categories. xPression uses the concept of categories to store and organize many types of documents. Think of a category as a container where you store information of a similar nature. For example, you might have a single category for all of your Auto policies because those policies use similar data, require a similar workflow, and use similar or identical access rights.

In short, categories are collections of documents with similar needs and similar uses. Placing documents into categories enables you to define attributes, data sources, access rights, and workflows for all documents in the category at once.

Categories: List Options

From the Category Management page menu, click the **Categories** submenu to display the Categories page. The Categories page displays a list of all existing categories. This page contains the following elements.

Element Name	Description
Add Button	Click **Add** to display the New Category page. The New Category page enables you to create a new category. See Creating a Category for more information.
Copy Button	To create a duplicate category, select the category you want to copy and click **Copy**. The duplicate appears in the category list with the words "Copy of" placed before the name of the original category.

Element Name	Description
Delete Button	To delete an existing category, select the category you want to remove and click **Delete**. Categories that contain documents cannot be deleted. You must remove all documents in the category before deleting the category.
Category Name List	To edit or view the settings of any category listed in the Name list, click the name of the category you want to edit or view. See Category Options for more information.

Creating a Category

To create a new category, complete the following steps.

1. From any xAdmin page, click **Category Management** and click **Categories**.
2. From the Categories page, click **Add**. The Add New Category page appears. The Add New Categories page displays a series of tabs. Each tab enables you to define related settings for your category. The General tab is activated by default.
3. On the General tab, you must supply a name and select an application to associate with the category, before you can save the category. See Categories: Data Sources Tab Options, page 46 for more information.
4. After saving your category, you can provide the remaining settings for your category from the following tabs.

Element	Description
General Tab	Click the **General** tab to display the General tab options. The General tab options enable you to specify the category name, attribute set, and associated applications. See Categories: General Tab Options, page 45 for more information.
Data Sources Tab	Click the **Data Sources** tab to display the Data Sources tab options. The Data Sources tab options enable you to add a data source group to the category from a list of existing data source groups. You can also define the primary data source group and set up your data sources on an application by application basis. See Categories: Data Sources Tab Options, page 46 for more information.
Mapping Tab	Click the **Mapping** tab to display the Mapping tab options. The Mapping tab options enable you to map all of the attributes in your attribute set and your extended attributes to values in your data sources. See Categories: Mapping Tab Options, page 48 for more information.
Access Rights Tab	Click the **Access Rights** tab to display the Access Rights tab options. The Access Rights tab options enable you to give users access to your xPression applications. See Categories: Access Rights Tab Options, page 53 for more information.

Element	Description
Workflows Tab	Click the **Workflows** tab to display the Workflows tab options. The Workflows tab options enable you to set your approval levels and assign approved users to either "Submitter" or "Approver" status. See Categories: Workflows Tab Options, page 57 for more information.
Output Profile Tab	Click the Output Profiles tab to define existing Output Profiles as "Default for Output" or "Default for Preview". See Output Profiles, page 62.
xPresso Documents	Click the xPresso Documents tab to see a list of xPresso documents in the category and perform actions on those documents such as: view a list of output profiles, view all versions of the document, enable effective date processing, view universal content usage, and withdraw document versions. See xPresso Documents, page 63.
xDesign Documents	Click the Document List tab to displays a list of all documents in the selected category. See xDesign Documents, page 66 for more information.

5. When you have finished defining your category, click **Save**. You new category will now appear in the Categories list.

Categories: General Tab Options

The General tab, contains the following settings.

- **Name** — Define a name for the category. The name can have up to 255 alphanumeric characters. You may include spaces in your category name, but the category name may not consist of only spaces. The name cannot start with or end with spaces. If you enter a name that starts with or ends with spaces, the spaces will be ignored.
- **Attribute Set** — Select the attribute set that you want to associate with the category. For more information about attributes, see Chapter 5, Category Management: Attributes.
- **Life Cycle** — Select the Lifecyle that you want to associate with the documents in this category. For more information about Lifecycles, see Chapter 7, Lifecycle. This option only appears if the following two conditions are met:
  - The xPression Server is configured for Documemtum workflow
  - The Attribute Set associated with the current category has the Approval attribute defined.
- **Applications** — Select the applications you want to associate with the category. This list of applications is inherited from the attribute set. When you select an application, the application becomes available for use in data source definition and authorizations. If you remove an application associated with the category by clearing the check box next to the application name, all information about the application is removed, and the category can't be used by the application.

Changing Your Attribute Set

You can change an attribute set after you create the category only if there aren't any documents in the category. If you change the attribute set, the user will be required to remap attributes to customer data fields through the category mapping function.

Additionally, if the selected attribute set has different associated applications, the associated applications list must be refreshed to reflect the new applications. All workflows associated with any applications that are removed by this action will be lost.

Ensuring Your Application is Associated with Your Attribute Set

If your application does not show up on the Access Rights, Workflow, or General tab, ensure the application is associated with your Attribute Set:

1. Open the Category and open the **`General`** tab.
2. Note the Attribute Set defined on that tab. This is the Attribute Set that is associated with your category.
3. From the **`Category Management`** menu on the left side of the page, click **`Attribute Sets`**.
4. Click the Attribute Set name that is associated with your Category. You looked up this information in step two.
5. Select your application from the list. Click **`Next`** twice to get to the Attributes tab, then click **`Save`**. If your application does not appear in the list, then it is not included in the applist.xml file located in your xPressionHome directory. See the *xFramework Developers Guide* for instructions on how to add your application to the file.

   Your application will now appear in the Access Rights, Workflow, or General tab.

Categories: Data Sources Tab Options

You access the data sources tab by clicking **Category Management**, then click **Categories**, click your category name, and click the **Data Sources** tab.

On the Data Sources tab you can add data source groups to your category, set the primary data source group for the category, and configure each data source group by application.

From the data sources page you can perform the following tasks.

Element Name	Description
Add Data Source Group button	Click **Add Group** to add an existing data source group to your category. See Adding a Data Source Group to Your Category, page 47 for more information.

Element Name	Description
Set Primary Button	To designates a data source group as the Primary data source group, select the data source group you want to identify as the Primary and click **Set Primary**. See Designating the Primary Data Source Group, page 47 for more information.
Set Application Button	To determine which applications can access a data source from the data source list, select the data source group you want to associate with an application and click **Set Application**. See Setting the Applications for a Data Source, page 48 for more information.
Remove button	To remove a data source or data source group from the list, select the item you want to remove and click **Remove**.

Adding a Data Source Group to Your Category

To add a data source group to your category, complete the following steps:

1. From the **Categories** page, click the **Data Sources** tab.
2. Click **Add Group**. xAdmin displays a list of data source group that are available to be added to the new category. The Associated Groups list shows all groups currently associated with the category.
3. Add a new data source to the category by selecting the data source group name from the Available Groups tab and clicking **Add**.
4. Click **Save** to commit your changes.

Designating the Primary Data Source Group

The primary data source group is automatically read first by xPression. A primary data source group defines the mapping between your attribute set and customer data fields. Each category may have zero or more secondary data source groups. In the primary data source group, there is a subset of data sources in which any specific application is interested, and one of them is primary for that application. There must be a primary table in the primary data source group that has the customer key for personalizing documents for the specific application.

To designate a primary data source:

1. From the **Categories** page, click the **Data Sources** tab.
2. Select the check box next to the data source you want to designate as the primary.
3. Click **Set Primary**. The primary data source group is displayed with a colored background.

Setting the Applications for a Data Source

You can customize each data source in a data source group by the application that accesses it. For example, you could assign your testing data sources to xDesign, and your production data to xPression Batch and xResponse.

To set the applications for a data source:

1. From the **Categories** page, click the **Data Sources** tab.
2. Select the check box next to the data source for which you want to specify applications.
3. Click **Set Applications**. The Choose Applications page appears.
4. Choose an application from the **Choose Application** list. .
5. All the data sources from your data source group appear in the Available or Associated Data Sources lists. The defined application can only access the data sources listed in the Associated Data Sources list
6. For each application, specify which data sources you want by selecting them from the Available Data Sources list and clicking the **Add** button.
7. If you are enabling more than one data source for any application, ensure that you select a default data source from the Default Data Source list.
8. Click **Save**.

Categories: Mapping Tab Options

One of the more powerful aspects of category management is the ability to set up default business logic for all documents in your category. This built-in logic will be applied each time you attempt to qualify customer records for any document in the category. This logic is used by xPression to choose the correct content from each content group in your xPression documents.

The **Mapping** tab enables you to set up this logic for your category by mapping the attributes in your attribute set to fields in your customer data. The mapping of these attributes determines which content item in a content group is selected during document assembly.

You access the mapping tab by clicking **Category Management**, then click **Categories**, click your category name, and click the **Mapping** tab. The Mapping tab contains two sections: The Attributes Section, page 48 and The Document Version Mapping to Data Source Group, page 50.

Note: If a date field is mapped to customer data, and the value in the record is null or of zero length, the value will be set to 00000000.

The Attributes Section

The mapping tab displays the attributes listed in your attribute set. When assembling documents, xPression will automatically qualify or disqualify content items based on the attributes and mappings

you define. If all the content items within a customer record do not match the attribute mappings, the customer record will not assemble.

The attributes section contains a list of attributes from the attribute set you selected for this category. The left side of the list contains the attribute names, the right side enables you to map values to the attribute. The Effective_Date, Status, and Withdraw_Date attributes appear in this list when the Approval option in the attribute set is selected. The Language attribute appears when one or more languages are added to the Locale.

Below the Attributes list is the Ordering list. This list enables you to order selected attributes. To add an attribute to the ordering list, select it from the Attributes list and click Add to Ordering. The Attributes section contains the following functions:

- **Attribute Column** — Appearing on the left side of the attribute list, this column displays all the attributes listed in your attribute set.
- **Operation Column** — Enables you to define a boolean operator that will correctly relate your attribute to the value defined on the Attribute Mapping page, select one of the operators from the list. You can select the following values: Less than or equal to (<=), Equal to (=), Greater than (>), Less than (<), Greater than or equal to (>=), Not equal (/=).

- **Data Source Table: Field/Value Column** — To provide mapping for an attribute, click the Data Source Table: Field/Value link for the attribute. When you click the link, xAdmin displays a Mapping page. This page enables you to map your attribute to a field in your data source or to associate it with a hard-coded value. See Mapping an Attribute, page 51 for more information.
- **Add to Ordering Button** — To enforce ordering on any of your attributes, select the checkbox for the attribute you would like to add to the ordering list and click Add to Ordering. Ordering determines how xPression returns the results of a query. This ordering is very important because it can drastically determine which content item is selected for a given customer. For more information, see Ordering an Attribute, page 52.
- **Ordering List** — Located beneath the Attribute list, this list contains all attributes that you selected for ordering.
- **Move Up/Down/Remove** — Enables you to move attributes up or down in the Ordering list. You can also remove attributes from the ordering list.

Note: (1) In content items with multiple attributes it is necessary to include the attributes in ordering to ensure that content is ordered by the desired attribute.

(2) The Effective Date attribute cannot be mapped to a secondary table.

The Document Version Mapping to Data Source Group

The Document Version Mapping section determines how xPression selects the correct document version during assembly. Your users could potentially have several versions of the same document with different effective and withdrawn dates.

Map document versions in the same manner as you map attributes, by clicking the “click to map” link. Choose the desired field from its resident table and Save your selection. xPression will automatically add the operators, which cannot be modified.

Effective Dates and Withdrawn Dates

When creating a document version, you must specify an effective date for the document. You also have the option of specifying a withdrawn date. xPression uses the effective and withdrawn dates to determine which version of the document is valid for a given customer.

Document versions are identified solely by their effective dates. Therefore, the effective for a document version must be unique. You can have two document versions with the same withdrawn date, but cannot have two document versions with the same effective date.

If you leave the withdrawn date blank, the value will be set to NULL, and it will not be used to qualify the document version for the customer. If you define a withdrawn date, it must be greater than or equal to the effective date. When a document is published, xPression will qualify a document version based on the following formula:

```
Version Effective Date <= Customer Data Effective Date < Version Withdrawn Date
```

Document Version Mapping to xPresso Data Source Group

If you are using Effective Date processing in this category, the Document Version Mapping section determines how xPression selects the correct document version during assembly. Your users could potentially have several versions of the same document with different effective and withdrawn dates. The mapping information is displayed in a table with the following columns:

- Attribute — This value is hard-coded as "Effective Date".
- Operation — There are two Operation columns indicating that the mapped value should be greater-than or equal-to the Effective Date, but smaller-than the Withdraw Date.
- Data Source Table: Field / Value — When no value is mapped, a Click to Map link appear in this column. When a value is mapped, the link text matches the mapped value.

See Enable Effective Date Processing, page 65 for more information about Effective Date processing.

To map document versions:

1. Click Categories from the Category Management menu and click the link for your category.
2. Click the Mapping tab.
3. Click the link in the "Data Source Table: Field / Value" column.
4. The Mapping page appears. From this page you can map the Effective Date attribute using:
   - xPath — Use an xPath value to identify the data in your XML data source.
   - Value — Supply a static Date value (mm/dd/yyyy).
   - System Time — Choose this option to set this value as the System Time, which is the current date on the server. This will provide an Effective Date that matches the publishing date.
   - None — Supply no value for Effective Date if you are not using Effective Date processing.

Mapping an Attribute

To map an attribute:

1. From the **Categories** page, click the **Mapping** tab.
2. For the attribute that you want to map, click the "**click to map**" link on the right side of the list. The mapping page appears.
3. From this page you can map your attribute to a value. You can select a value in three ways:
   - Click **Table** to select a table and field from your primary data source.
   - Click **Value** to define a specific literal value. If you are mapping a Date variable, xPression enables you to supply the value in date format. For all other types of variables, you can supply the value in the provided box.
   - To supply no value for the attribute, click **None**.
4. Click **Save**.

5. After mapping your attribute you must choose an operation to define how your mapping relates to your attribute. Select one of these values from the Operation drop-down list.
   - <= Less than or equal to
   - = Equal to
   - > Greater than
   - < Less than
   - >= Greater than or equal to
   - /= Not equal
6. Click **Save**.

Ordering an Attribute

Ordering determines how xPression returns the results of a query. This ordering is very important because it can drastically determine which content item is selected for a given customer.

For example, it is not uncommon to have an xDesign content group that contains two versions of the same content item. This can occur when you need to make updates to an existing content item, but do not want to remove the old content item. You can create two versions of the same content item using different effective dates.

With two versions of the same content item in the same content group, which version will xPression select when it assembles your document? If you do not order your EFFECTIVE_DATE attribute, then xPression will select the content item with the older effective date because that content item will appear first in the list. If you order the EFFECTIVE_DATE attribute in **Descending** order, xPression will select the newer effective date. Ordering a Date in descending order places the most recent date at the top of the list. If there are multiple versions of the same content item with the same effective date, xPression will always select the highest (newest) version.

To add an attribute to the ordering table:

1. From the **Categories** page, click the **Mapping** tab.
2. In the Attributes section, select the attribute check box and click **Add to Ordering**.
3. The attribute appears in the Ordering list. In the Order column, select whether the attribute is ordered by Ascending (lowest to highest) or Descending (highest to lowest) value.
4. If you have more than one attribute in the ordering list, you can change the order in which the attributes will be selected by moving a selected attribute up or down with the Move Up or Move Down buttons.
5. Click **Save**.

Duplicating DLS Business Logic in xPression

If you have upgraded from Document Library Services (DLS) to xPression and want to duplicate the DLS logic in xPression, use the mapping shown below and order the attributes by Effective Date, in ascending order:

- Effective Date <= A date field in your data source
- Jurisdiction = A field in your data source
- Withdrawn Date > A date field in your data source
- Language = A field in your data source

If the Language values in your DLS products are defined in all uppercase characters (for example, ENGLISH), they will not match the xPression default language names, which use initial capitals (for example, English). If you don't change the default language names to match your product's Language values, your content may fail to qualify when you try to assemble your xPression document. For information on changing your default language names, see Chapter 12, System Management.

Categories: Access Rights Tab Options

Categories control access to the documents they contain. Access rights determine what activities individual users can perform on xPression documents with xDesign, xResponse, xRevise or your own xFramework application. The **Access Rights** tab enables the system administrator to authorize access on different levels to users of xPression applications.

To view the Access Rights tab, click **Category Management**, then click **Categories**, click your category name, and click the **Access Rights** tab. This tab enables you to define access rights for your xPression applications.

From the data sources page you can perform the following tasks.

Element Name	Description
xDesign: View/Change Access Rights	Click the **View/Change** hyperlink in the Access Rights column to edit the access rights for xDesign. See Setting Access Rights, page 54 and Access Rights Options for xDesign, page 55 for more information.
xResponse: View/Change Access Rights	Click the **View/Change** hyperlink in the Access Rights column to edit the access rights for xResponse. See Setting Access Rights, page 54 and Access Rights Options for xResponse, page 56 for more information.

Element Name	Description
xRevise: View/Change Access Rights	Click the **View/Change** hyperlink in the Access Rights column to edit the access rights for xRevise. See Setting Access Rights, page 54 and Access Rights Options for xRevise, page 56 for more information.
Dreamweaver, InDesign, and Word: View/Change Access Rights	Click the **View/Change** hyperlink in the Access Rights column to edit the access rights for xPresso for Dreamweaver, xPresso for Adobe InDesign, or xPresso for Word. See Setting Access Rights, page 54 and Access Rights Options for xPresso Applications, page 57 for more information.

Setting Access Rights

To set access right for an application:

1. Click the **Access Rights** tab from the **Categories** page.
2. Click the **View/Change** hyperlink that corresponds to the application whose access rights you want to configure.
3. The user list for the selected application appears. The user list contains a list of users that have been given access rights to the category on the left side and a list of available parameters on the right side. From this page you can add new users to the access rights list and configure the permissions for each user on the list. To add a new user to the list, click **Add**.
4. xAdmin displays a list of available users. In the Available Users list, xAdmin displays a list of user names and groups taken from the list of local users on the xAdmin server.
5. Select one or more users from the Available Users list and move them to the Selected Users list by clicking **Add**. You can multi-select from this list using the Shift and Ctrl keys.
6. If your environment uses Documentum workflow, you will see the “Document Status” option at the bottom of the page. The listed statuses belong to the Life Cycle associated with your category on the General tab.
7. Once the users are added, click **Save**.
8. You can now define the access level for the new user. Each application contains a different set of access levels. For a description of these levels, see Access Rights Options for xDesign, page 55, Access Rights Options for xResponse, page 56, Access Rights Options for xRevise, page 56, or Access Rights Options for xPresso Applications, page 57.
9. Click **Save** when finished.

Note: Giving a user Approve-level access does not automatically grant Write privileges. You must select each level individually

Access Rights Options for xDesign

xDesign uses the following set of access levels.

Option	Description
Document Status	This option only applies to environments using Documentum workflow instead of the built-in xPression workflow approval system for approving xDesign documents. This column identifies the document status that the specified user is authorized to access. Users can be authorized to access multiple statuses. If a user is authorized for multiple statuses, it appears in the list once for each status.
Read	This permission gives the user the ability to browse and test assemble documents.
Write: Content	This permission enables you to make changes to content, but unable to make changes to the rule structure, attributes, criteria, or document properties. Content access users are automatically given Read-level access. For a list of features that are enabled and disabled for these users, see the *xDesign User Guide*.
Write: Rule	This permission enables you to make changes to the rule structure but not the content of the documents in the category. You can make changes to the rule structure, attributes, criteria, and document properties. For a list of features that are enabled and disabled for these users, see the *xDesign User Guide*.
Shared Admin	This permission enable you to modify the content and usage of shared rules and their elements. Shared Admin-level users are automatically granted Read and Write authority.
Approve	This permission enables you to approve documents and content. This is the highest approval level. Approve-level users are automatically granted Read, Write, and Shared Admin authority.

To set access rights for your application, see Setting Access Rights, page 54.

If you are using xPression Catalog, your access rights settings enable and disable the following features. Both Read and Write (Content and Rule) access will allow you to Login and Browse for documents. You need both **Write:Content** and **Write:Rule** access to perform the following tasks (you can also use the SharedAdmin or Approve access rights which include both Write:Content and Write:Rule):

- Import documents
- Import documents to new category
- Import documents from the xPression Repository
- Add or Copy tags from the Tag tree
- Update Name in the Information tab
- Update Word template in the Properties tab

- Update the description in the Information tab
- Delete documents or packages in Catalog
- Add/Remove tags from Custom Fields

Access Rights Options for xResponse

xResponse uses the following set of access levels.

Access Level	Description
Read	Request, preview and distribute documents.
Write_Data	Modify the customer data used to build a document, request, preview, and distribute a document.
Write_Document	Modify the data source, request, preview, edit with the secured browser editing interface, and distribute a document.
Approve	Approve documents and content. This is the highest approval level.
Admin	Execute web service methods for any work item, even if the user is not the owner of the work item.

To set access rights for your application, see Setting Access Rights, page 54.

Access Rights Options for xRevise

Users with Read/Write access can be defined as submitters for the standard SUBMITTED workflow state, but they cannot be defined as submitters to any custom approval state. Only users with Approve permissions can be defined as submitters to a custom approval state. xRevise uses the following set of access levels.

Access Level	Description
Read	Preview work items only. Users with Read authority will see the Completed Work page only.
Write	Preview, edit, and reassign work items. Users with Write authority will see the Work in Progress and Completed Work pages. Write users can delete work items from the Work in Progress page, but not from Completed Work.
Approve	Approve work items. This is the highest approval level. Users with Approve authority will see at least the Work in Progress page.
Admin	Preview, edit, assign, and reassign work items. Users with Admin authority will see all three xRevise work queues: Work in Progress, Active Work, and Completed Work. Admin users are the only users authorized to delete work items from the Completed Work archive.

To set access rights for your application, see Setting Access Rights, page 54.

User Groups

User groups as well as individual users can be identified as approvers and submitters. Exercise caution when making user groups approvers. When an xRevise document is submitted to a group for approval, then no individual user will own the work item and so the hyperlink to open the document in xEditor will be inactive for all users. This design feature ensures that work items are available for editing to a specific individual only. To activate the hyperlink select the work item, click the Reassign button on the Actions bar, and then assign the work item to the current user or another user as desired.

Access Rights Options for xPresso Applications

xPresso applications use the following set of access levels.

Access Level	Description
Read	The user can view documents in their designated xPresso editor.
Write	The user can modify documents in their designated xPresso editor.

If you are using xPression Catalog, your access rights settings enable and disable the following features. Both Read and Write access will allow you to Login and Browse for documents.

You need **Write** access to perform the following tasks:

- Import documents
- Import documents to new category
- Import documents from the xPression Repository
- Add or Copy tags from the Tag tree
- Update the description in the Information tab
- Delete documents or packages in Catalog
- Add/Remove tags from Custom Fields

Categories: Workflows Tab Options

This tab enables you to manage the built-in xPression workflow systems. To use a Documentum Process Builder Lifecycle instead, you must deactivate the xPression workflow system. See Chapter 7, Lifecycle for more information. From this tab you can enable and configure the xPression workflow system, which works for xDesign documents, or the xPresso for Word workflow system, which works for only xPresso for Word documents.

- xPression Workflow System, page 58
- The xPresso for Word Workflow System, page 59

xPression Workflow System

A *workflow* is a representation of all the different levels of approval an xDesign or xPresso document must pass through before it reaches the final approval level. The purpose of the workflow system is to provide an easy way to review documents for accuracy and style before they are made available to xPression's publishing services. A workflow process is not required in xPression. However, if your category uses an attribute set which has the Approval option enabled, you will need to create a workflow for each application associated with the category.

Enabling xPression Workflow

You can enable workflows for each application that is associated with your Category. To enable xPression workflow:

1. First, ensure your application is associated with your category. Click the **Category Management** menu, click **Categories**, and click the name of the Category from the list.

   The General tab shows all the applications associated with your Category. This list of applications is inherited from the attribute set. Ensure your application appears on this list and is selected. For example, if you are creating xDesign documents, make sure "xPression Design" appears in the Application list. If you application does not appear on this list, it is not associated with your Attribute Set. See Ensuring Your Application is Associated with Your Attribute Set, page 46 .

   If your custom application does not appear in the list, it is likely that your custom application was not added to the applist.xml file and/or the application is not associated with the Category's Attribute Set. To add the application to the applist.xml file, see *xFramework Developers Guide*. To associate the application with the Category's Attribute Set, see Ensuring Your Application is Associated with Your Attribute Set, page 46.

2. Ensure your Attribute Set is enabled for Approval. The General tab for your Category identifies the Attribute Set used by your Category. To ensure your Attribute Set if enabled for Approval, click **Category Management**, click **Attribute Sets**, and click the name of your Attribute Set. Click the **Advanced** tab. You can enable your Attribute Set for Approval on this tab. Before selecting Approval, see Chapter 5, Category Management: Attributes.

3. Now that your Attribute Set and Category are configured, you can enable Workflow. Click the **Workflows** tab for your Category. The Workflows tab shows a list of all your applications. To enable Workflow for any application, click **Add Workflow** for that application.

4. Workflow is now enabled for your application. Next, configure your workflow with Approvers, Submitters, and Document States:
   - Define Approvers and Submitters for Workflow, page 61
   - Adding a Document State to Your xPression Workflow, page 62
   - Return to User, page 62

The xPresso for Word Workflow System

If your category is enabled for xPresso for Word documents, you have the option of enabling the xPresso for Word workflow for the category. Once a category is enabled for xPresso for Word workflow, the workflow system cannot be removed from the category. Approving, rejecting, and withdrawing content is done in xPresso for Word, see *xPresso for Word User Guide* for more information. Withdrawing content can also be done in xAdmin, see Withdraw Package, page 65.

The xPresso for Word workflow sets up four content states: Pending, Submitted, Rejected, and Approved. Documents proceed through the system from Pending to Submitted, and from Submitted to either Rejected or Approved.

The workflow system enables you to configure an xPression Server with a system setting that specifies the lowest level of document the server is able to publish. This setting is called the Server Publish Level. The valid Publish Levels are:

- Any — permits publishing of Pending, Submitted, or Approved documents.
- Submitted — permits publishing of Submitted and Approved documents.
- Approved — the "highest" level, permits publishing of Approved documents only.

You can set a different Publish Level for each xPression Server in your environment.

When you publish or migrate a document in a workflow, you can identify what level of document you want to publish. You can choose:

- [Use System Setting] — with this option, xPression attempts to select a document whose status matches the system setting.
- Any, Pending, Submitted, and Approved — with these options, xPression attempts to select a document whose status matches your selection. When using this option, the list will display only those statuses that are "higher" than the System Setting.

See the following topics:

- Enabling xPresso for Word Workflow , page 59
- Adding Users to a Workflow, page 60
- Rejected Content, page 60
- When Selecting "LATEST" Version, page 60
- Migration, page 60
- Missing Content and Errors, page 60

Enabling xPresso for Word Workflow

To enable workflow for xPresso for Word:

1. First, ensure xPresso for Word is associated with your Category. Click the **`Category Management`** menu, click **`Categories`**, and click the name of the Category from the list.

   The General tab shows all the applications associated with your Category. Ensure xPresso for Word (Word) appears in the list. If xPresso for Word does not appear on this list, it is not

associated with your Attribute Set. See Ensuring Your Application is Associated with Your Attribute Set, page 46 .

2. Ensure your Attribute Set is enabled for Approval. This action ensures that the category has access to all applications associated with the category. Before selecting Approval, see Chapter 5, Category Management: Attributes.
3. Now that your Attribute Set and Category are configured, you can enable Workflow. Click the **`Workflows`** tab for your Category and click **`Add Workflow`** for xPresso for Word. Once Workflow is added to a Category, it cannot be removed.
4. Next, configure your workflow with Approvers, Submitters, and Document States.

Adding Users to a Workflow

To add users to a workflow, use the following instructions: Define Approvers and Submitters for Workflow, page 61.

Rejected Content

Content in a Rejected state can never be published, though it can be checked out, opened, and previewed from xPresso for Word. It can also be branched and versioned.

When Selecting “LATEST” Version

When a user selects content from a workflow enabled category using “LATEST”, they will receive the latest approved version of the document.

Migration

The xPresso for Word workflow system permits you to migrate or export only Approved content.

Missing Content and Errors

You can configure how xPression responds when it is unable to find a document. This can occur for many reasons, such as:

- The requested version does not exist
- The document itself does not exist
- The requested version is Rejected
- Or any other case that results in a particular version not being found

You can direct xPression to generate a fatal error, to generate a warning, to ignore the unresolved content, or to simply note the missing content in the log file. This setting is named OnPackageNotFound and it is located in the xPressionPublish.properties file located in the xPressionHome directory. See the *Administering the xPression Server* guide for more information.

Define Approvers and Submitters for Workflow

You must add user access to each Document State. You can also optionally specify an e-mail address for an approver. When a document arrives at this document state, xPression sends an e-mail message to the approver to notify them that they must approve the document.

When a *Submitter* (a user with Write-level authority) sends a document to the xPression workflow system, its first stop will always be the SUBMITTED level. To advance to the next level, an *Approver (*a user with Approver-level authority) must okay its content.

To define approvers or submitters for your application:

1. Click the **Workflows** tab from the **Categories** page.
2. Click the **View/Change** hyperlink that corresponds to the application whose workflow you want to configure.
3. xAdmin displays a list of all document states. APPROVED and SUBMITTED appear by default.
4. Select the document state for which you want to apply user access.
5. Click **Set User Access**.
6. Select a user.
7. If you want the user to be notified of workflow changes, supply an email address for the user.
8. Click **Save**.

Tip: If your organization is large enough, add more than one approver for each level. Having only a single approver per level could cause bottlenecks if the approver happens to be ill or on vacation.

Users can be removed from a workflow by clicking **View/Change** for the application's workflow, selecting the user to be removed, and then clicking **Remove**.

Note: This note applies to xResponse workflows only.

In some cases, when an xResponse submitter deletes a transaction, it is possible that a user cannot be removed from a workflow, even though the user has no open approvals. To remove a user from a workflow when the normal method does not work run one of the following SQL statements.

For individual users run:

DELETE FROM T_WORKFLOWDATA WHERE WORKFLOW_ID=101 AND OBJID=502 AND ORIGINALOWNER=N'xpression1'

Ensure that workflow_id, objid and originalowner are set to the appropriate values.

For groups run:

DELETE FROM T_WORKFLOWDATA WHERE WORKFLOW_ID=101 AND OBJID=502 AND ORIGINALOWNER=N'Submitter'

In the case of groups “Submitter” is the group name the xResponse user belongs to, and “Submitter” is set in the workflow as a group rather than a user.

Adding a Document State to Your xPression Workflow

This feature is not supported for xResponse workflows or xPresso for Word workflows. When you add a new document state to your workflow, the new document state always appears between the APPROVED and SUBMITTED states. There is no limit to the number of states you can add. For xRevise, users with Read/Write access cannot be defined as submitters to any custom approval state. Only users with **Approve** permissions can be defined as submitters to a custom approval state.

To add a document state for your application:

1. Click the **Workflows** tab from the **Categories** page.
2. Click the **View/Change** hyperlink that corresponds to the application whose workflow you want to configure.
3. xAdmin displays a list of all document states. APPROVED and SUBMITTED appear by default.
4. Click **Add**.
5. Type a name for the document state. The name must be between 1 and 255 alphanumeric characters.
6. Click **Save**. The new state appears between the SUBMITTED and APPROVED document states.

Return to User

(xRevise only) This option returns the document to the author (the original submitter) upon approval. The document will only progress to the next level when the submitter *re-submits* the approved document. You can set this option on the SUBMITTED document state and any user-defined document state. For more information, see the *xRevise User Guide*.

Output Profiles

This page shows a list of all available Output Profiles. From this list you can define an Output Profile as Default for Output, page 63 (for xResponse and xRevise only) or Default for Preview, page 63 for all documents in the category.

An output profile can be selected for each of the two default settings. For interactive applications with the ability to generate server-side preview, a PDF output profile is required.

An output profile must meet the following requirements to be used by default:

- Single Stream
- PDF Only
- Return to Caller distribution

This Category-level setting can be overridden by settings at the document-level. See View Output Profiles, page 64 and View Output Profiles, page 68 for more information.

Default for Output

The “Default for Output” option identifies the Output Profile that xPression will use by default when publishing a document from this category with xResponse or xRevise. This option cannot be used if you are publishing with Web Services. It is only for use with the xRevise and xResponse thin client applications. Do not select this option if you are using Web Services. If no output profiles are selected, all output profiles will be available to the end user in xResponse or xRevise.

Default for Preview

The “Default for Preview” option identifies the Output Profile that xPression will use by default when previewing a document from this category. This option can be used to add features such as DRAFT watermarks, barcodes and other options, and can also be used to improve performance by reducing the size of the file using image down sampling and other options. The user can choose a profile other than the default at the time the output or preview is initiated. If no output profiles are selected, all output profiles will be available to the end user in xResponse, xRevise, or a custom IDDK correspondence application.

xPresso Documents

This tab lists all xPresso documents checked in to the server. You can search for a specific document by typing the name in the name box. This list does not show each specific version of the document. To see each version of a document, click the document name. You can perform the following actions on the documents in this list:

- Delete Document Tree, page 63
- View Output Profiles, page 64
- View Version , page 64
- Enable Effective Date Processing, page 65

Additionally, you can view Universal Content usage and withdraw packages for specific versions of content. See View Version , page 64 for more information.

Delete Document Tree

Only xAdmin super administrator users are able to delete documents from xAdmin. When you delete a document, the entire tree is deleted, including all versions and branches. To delete a document tree, select the document from the list and click Delete. See xAdmin Users, page 21 for more information about the super administrator user.

View Output Profiles

To view the Output Profiles associated with a document, select the document and click **`View Output Profiles`**. This page shows a list of all available Output Profiles. From this list you can define an Output Profile as Default for Output (for xResponse and xRevise only) or Default for Preview for the document. This setting overrides the Category setting. See Output Profiles, page 62 for more information.

View Version

To view the current versions of a document, select the document from the list and click **`View Version`** from the toolbar. You can also click the document name. All versions of the document will appear in the list. The list displays the version number, the user that has the document checked out (if necessary), the Status, the last user who checked the document in, the date and time it was checked in, the effective date, the withdrawn date, and Comments. Also, you can see a Document Status History by clicking the version status. From this list you can also View Universal Content, page 64 and Withdraw Package, page 65.

- Version — the version number.
- Checked Out By — if the document is checked out, the user is identified in this column.
- Status — the current workflow status.
- Checked In By — identifies the last user to check the document in.
- Checked In Date — identifies the date and time of the last check in.
- Effective Date — the effective date of the version.
- Withdraw Date — the withdraw date of the version.
- Comments — Any comments associated with the version.

You can perform the following actions on any document in the list: View Universal Content, page 64 and Withdraw Package, page 65.

Note: You can not cancel a document check out from xAdmin. A document check out can only be cancelled through the appropriate xPresso design tool.

View Universal Content

This feature displays two pieces of information:

- A list of documents that use the selected document version as Universal Content
- A list of documents that appear in the selected document version as Universal Content

To view this information for any document version, select the version and click **`View Universal Content`**.

Withdraw Package

To withdraw a document version, select the version and click **`Withdraw Package`**. Select a version from the list and click **`Withdraw Package`** to make a piece of content ineligible for publishing. This effectively removes the content from the workflow system. You can only withdraw Approved and Rejected documents, not Pending or Submitted documents. Withdrawn content can be opened and previewed in the client application, and checked out, branched, or versioned, but it can never be published. Any user may withdraw content.

Enable Effective Date Processing

Effective Date processing lets you define a dates for when a piece of content is valid and invalid for publishing. An Effective Date is the date on which a piece of content becomes valid for inclusion in a document. A Withdrawn Date is the date on which the content is no longer valid. Your customer data must contain a date field that can be compared against the document Effective Date.

See the following topics:

- Understanding Effective Date Processing, page 65
- Using Effective Date Processing, page 65

Understanding Effective Date Processing

Consider a scenario where your document must contain some date specific content. The content can change every year, so you set Effective and Withdrawn Dates to start at the beginning and end of the year. Each time you need to update the content, you create a new version:

- DocA v1.x— Effective Date 1/1/2012, Withdrawn Date 12/31/2012
- DocA v2.x — Effective Date 1/1/2013, Withdrawn Date 12/31/2013

Your customer begins an account on June 12, 2012. When the document is published, xPression determines which piece of content was “effective” on June 12, 2012. Version 1.x is selected.

Consider another scenario where you have the following two documents:

- DocB v1.x — Effective Date 1/1/2012, Withdrawn Date 12/31/2012
- DocB v2.x — Effective Date 4/1/2012, Withdrawn Date 4/30/2012

If your customer Effective Date is April 25, 2012, version 2.x is selected. If another customer has an Effective Date of May 5, 2012, version 1.x will be selected.

Using Effective Date Processing

The Effective and Withdrawn Dates are set in the xPresso for Word client application when the document designer checks in document to the server. As an xPression administrator, you have ensure that you have your system set up properly, or Effective Date Processing will not work.

To configure xPression for Effective Date Processing:

1. Ensure you are able to supply an Effective Date for your customer records. This date will be compared against the Effective and Withdrawn Dates assigned to your documents. The customer Effective Date usually comes from your customer data, but it can also be hard-coded in xAdmin or associated with the System Time (see step 3).
2. Ensure your category uses an Attribute Set that contains the Effective Date attribute. To define an Attribute Set for your Category, see Categories: General Tab Options, page 45.
3. Ensure the Effective Date attribute is mapped to a date value in your category. The value can be supplied by a field in your data source, a hard-coded value, or the system time. See Document Version Mapping to xPresso Data Source Group, page 51 for more information.
4. Ensure that your document uses the same schema that is associated with the Category.
5. Enable Effective Date Processing for your document. This can be done from the xPresso for Word client application, or from xAdmin. To enable Effective Date Processing from xAdmin, click the **`xPresso Documents`** tab for your Category, select the document, and select **`Enable Effective Date Processing`**.

xDesign Documents

The Document list displays all of the documents in the selected category. To access the document list, click the Document List tab. The Document List displays the document name, description (as provided in the design tool), type, lifecycle status, and last modified time. From this tab you can perform the following tasks:

- Delete, page 66
- View Version, page 66
- View Universal Content, page 68
- View Output Profiles, page 68
- Show Thumbnails, page 69

Delete

To delete a document, select the check box next to the document name and click **Delete**. You can also delete specific versions of a document using the View Version button.

View Version

Select the check box next to a document in the list and click the **View Version** button to view information about the Versions that the document designer created for this document. The information available is different for xDesign and xPresso documents. For both document types,

you can change the document effective date and withdraw date, and delete specific versions of the document. For more information, see Changing the Effective or Withdraw Date, page 67.

The View Version page shows the following information:

- **Effective Date** — This box lists the effective date for the document version. You can change the effective date by typing a new date in the box and clicking Save. If another version of this document exists, make sure you choose a unique effective date. If you choose an effective date that is already in use for this document, you will receive an error.
- **Withdraw Date** — This box lists the withdrawn date for the document version. You can change the withdraw date by typing a new date in the box and clicking Save. The Withdrawn date must be greater than or equal to the specified effective date. The Withdrawn Date is an optional setting. If you leave the Withdrawn Date blank, the value will be set to NULL, and it will not be used to qualify the document version for the customer.

Changing the Effective or Withdraw Date

When viewing the version information, you can edit the effective and withdraw dates for the document. Each document must have a defined effective date. The withdrawn date is optional. xPression uses the effective and withdrawn dates to determine which version of the document is valid for a given customer.

Document versions are identified solely by their effective dates. Therefore, the effective for a document version must be unique. You can have two document versions with the same withdrawn date, but cannot have two document versions with the same effective date.

If you leave the withdrawn date blank, the value will be set to NULL, and it will not be used to qualify the document version for the customer. If you define a withdrawn date, it must be greater than or equal to the effective date.

When a document is published, xPression will qualify a document version based on the following formula:

```
Version Effective Date <= Customer Data Effective Date < Version Withdrawn Date
```

To change the effective or withdrawn date:

1. From the Document List page, select a document and click **View Version**.
2. Place the cursor in Effective Date or Withdraw Date box and delete the preexisting date (if needed).
3. Type a new date using the following syntax: **YYYYMMDD**
4. Click **Save**.

View Universal Content

Select the check box next to a document in the list and click the **View Universal Content** button to view the Universal Content usage. This tab contains two sections:

- **Used as Universal Content in.** Displays all xDesign documents or xPresso packages that use your selected document as Universal Content.
- **Contains as Universal Content.** This section contains a list that displays all Universal Content items used in the selected document. This list shows the Universal Content item name, the Universal Content type, and for xDesign or xPresso Universal Content, it shows if the usage of the Universal Content is valid. A check mark indicates that the xDesign or xPresso Universal Content item resides in the xPression database and will be resolved properly during publishing. xDesign and xPresso Universal Content items can only reside in an xPression database. If the xDesign or xPresso Universal Content item does not reside in the xPression database, the content is marked as Invalid. For image, Microsoft Word, and PDF Universal Content, the Validity column will be empty because the location of those items can be variable. If your content is marked as invalid, it is likely it was not migrated to the current server with the master document.

Note: xPresso package files created in a pre-4.0 version of xPresso do not contain universal content information. In order to see universal content information in xAdmin, the document must be repackaged in a version 4.0 (or later) xPresso design client.

View Output Profiles

To view the Output Profiles associated with a document, select the document and click **`View Output Profiles`**. This page shows a list of all available Output Profiles. From this list you can define an Output Profile as Default for Output (for xResponse and xRevise only) or Default for

Preview for the document. This setting overrides the Category setting. See Output Profiles, page 62 for more information.

Show Thumbnails

Select this option to show a small thumbnail image of the document in the Description column.

Important Tips for Administering Categories

Review the following tips to help successfully administer your categories:

- After You Make Changes to a Category
- After You Create a Document in an Empty Category

After You Make Changes to a Category

Remember that any time you make changes to categories that affect the document assembly, you must make sure your designers generate XML so that the changes are applied to their documents.

After You Create a Document in an Empty Category

If you create a document in xDesign in a category that previously had no documents, and do not generate XML, xPression will not recognize the document as being attached to the category.

Chapter 5

Category Management: Attributes

This chapter examines the Attributes submenu of Category Management. If you do not see this submenu in the xAdmin interface, you do not have permission to access it. See your xPression administrator for access. The Categories submenu is documented in Chapter 4, Category Management: Categories and the Data Sources submenu is documented in Chapter 6, Category Management: Data Sources.

About Attributes

Attributes are values applied to every piece of content in a document. They provide an easy way for the designer to control which content is assembled for each customer. If the attribute value(s) specified on the content item match the values configured in the Mapping section of the Category, then the content item is assembled for that customer. Typically, attributes are mapped to fields in the customer data.

All attributes are created through and organized by attribute sets. There can only be one defined attribute set for each category, but many categories may use the same attribute set. xPression attributes support the following data types of data: Integer, String, and Date. If you want to qualify content based on a field in your data source that is not mapped to an attribute in your attribute set, you must use selection criteria.

Make sure to notify your document designers any time you make changes to a document's attribute set so that they can Generate XML and create or update the Document Version. If they do not update the document's XML or version, the changes you made won't be accurately reflected in the xPression database.

Note: For former DLS users, an attribute set replaces the hard-coded DLS logical rule structure based on the Effective Date, Jurisdiction, and Language fields in your customer data source. You can now base your rule logic on any fields in your customer data source. Each xPression installation provides a default attribute set called **US Regulatory** that uses Jurisdiction, Effective Date, Status, Withdrawn Date, and Language as selection attributes.

How Attributes Work

A common usage for attributes is the state of residence. For example, if a piece of content contains regulatory information for a particular state, then only customers that reside within that state should get letters containing that content.

To achieve this, you need three things. First, you need a field in your customer data source that contains information about customer's state of residence. Next, in the Mapping section of your category, you need to map the jurisdiction attribute to the field in the customer data source that contains the state of residence information. Third, when creating a content item, you must supply a value for the jurisdiction attribute.

When the document is assembled, xPression validates the attributes of each content item by comparing the value specified in the content item against the value in the data source for the current customer record. If they match, the content item is included in the document. If not, the content will not qualify and will be ignored.

An In-Depth Look at xPression Attributes

xPression attributes fall into two broad categories: system attributes and usage attributes.

System Attributes

xPression applies its own internal attribute set to every content item. These attributes are sometimes called "Built-in" Attributes. These attributes are created and managed by the xPression system based on events in the lifecycle of the content item they are applied to.

Examples of a few, but certainly not all, of the xPression system attributes are listed below:

- AUTHOR. The name of the user who created the content.
- MODIFIED_DATE. The date of the last modification to the content.
- SHARED. A **Yes** or **No** value that indicates whether the content item can be used in several documents created by different users.
- Stored_By. The user who stored the item.
- Date_Stored. The date the item was stored.

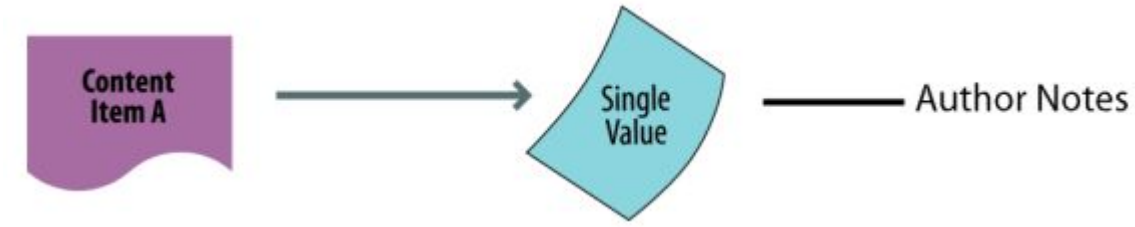
Usage Attributes

Some usage attributes have one unique value for each usage. These are called *single-value attributes*. Other usage attributes such as JURISDICTION can potentially have several values for each usage. These are called *multi-value attributes*.

Usage attributes enable the user to define attributes that pertain to the usage of the content in a specific document. Content items can have several usage attributes. Examples of usage attributes

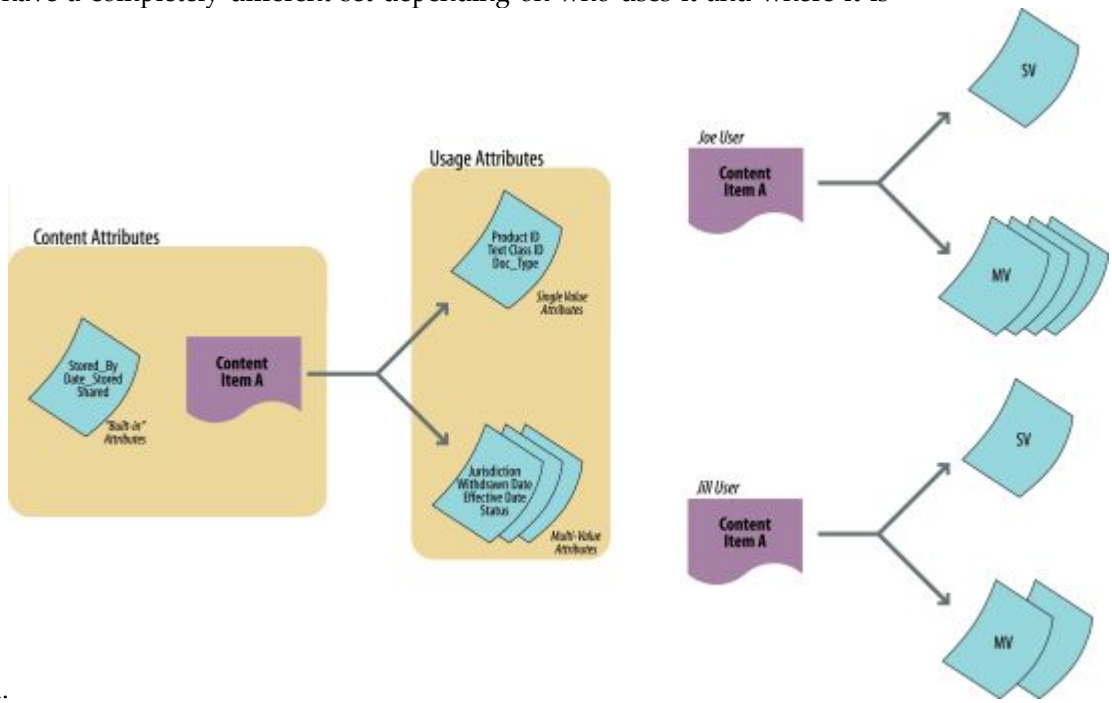
are JURISDICTION (a multi-value, user-defined attribute) and EFFECTIVE_DATE (a single-value, user-defined attribute).

This image shows a single-value attribute



.

A shared content item can have a fixed set of attributes related to its content, yet also have a completely different set depending on who uses it and where it is



used.

Attributes: List Options

To access the Attributes page, click **Attribute Sets** from the **Category Management** page menu. This page lists all existing attribute sets. This image shows a sample list of attribute sets. This page contains the following elements.

Element Name	Description
Add Button	Click **Add** to display the New Attribute Set page. The New Attribute set page enables you to create a new category. See Creating an Attribute Set, page 75 for more information.
Copy Button	To create a duplicate attribute set, select the attribute set you want to copy and click **Copy**. The duplicate appears in the list with the words "Copy of" placed before the original name.

Element Name	Description
Delete Button	To delete an existing attribute set, select the attribute set you want to remove and click **Delete**.
Attribute Name List	To edit or view the settings of any attribute set listed in the Name list, click the name of the attribute set you want to edit or view.

Creating an Attribute Set

Before you modify or remove attribute sets, be aware that all attribute sets are available to all xPression users, even minor modifications can potentially have far-reaching (and unintended) consequences for your users.

To create an attribute set:

1. Access attribute sets by clicking Category Management, and then clicking **Attribute Sets** from the category management menu.
2. From the Attribute Sets page, click **Add** to start the attribute sets wizard. The General tab appears. On the General tab you will need to provide a name for the attribute set and select which xPression applications can use the attribute set.
3. Add a name for the attribute set. The name can be between 1 and 255 alphanumeric characters in length. Valid characters for the name are 'A' through 'Z', 'a' through 'z', '0' through '9' and the underscore (_) character. Also, the first character of the attribute must be an alphabetic character. The first character can not be a number or the underscore character. If you are using a DB2 database, there are additional naming restrictions. See Attribute Sets: General Tab Options, page 76 for more information.
4. Select which applications you want to associate with the attribute set. When completed, click **Next**. See Attribute Sets: General Tab Options, page 76 for more information about the General tab options.
5. The Advanced tab appears. On the Advanced tab you can define usage notes, multi-value notes, and activate the approval attributes.

   If you want to enable users to add notes to content items that use these attributes, select Usage Notes. If you want to enable users to add notes to groups of multi-value attributes, select Multi-Value Notes. If you want to enable the xPression approval subsystem, select this option.

   See Attribute Sets: Advanced Tab Options, page 76 for more information about the Advanced tab options. When completed, click **Next**.
6. The attributes tab appears. On the Attributes tab you can create attributes and add attributes, both existing and new, to your attribute set. The Attributes tab enables you to add attributes to the attribute set. You can add a new or existing attribute to the attribute set. For more information, see Attributes Sets: Attributes Options, page 77.

   To create a new attribute, see Creating a New Attribute, page 77. To add an existing attribute, see Add an Existing Attribute, page 78.
7. At this point you can Save your attribute set. Notice that the page contains a **Save** and a **Preview SQL** button. You have the option of enabling xAdmin to automatically commit the changes to

your xPression data source (Save), or xAdmin can provide you the SQL scripts so you can update the xPression data source manually (Preview SQL). If you do not want xPression to make changes to your data source, use the Preview SQL feature.

Attribute Sets: General Tab Options

You can access the General tab options through one of two methods: you can create a new attribute set by clicking Add from the Attribute Sets page, or your can click the name of an existing attribute set.

The General tab contains the following options.

Element Name	Description
Name	The Attribute Set name can be 1-255 English alphanumeric characters in length. Valid characters for attribute names are 'A' through 'Z', 'a' through 'z', '0' through '9' and the underscore (_) character. The first character of the attribute name must be an alphabetic character ('A' through 'Z', 'a' through 'z').
Apply Attribute Set to the Following Applications	Select the applications you want to associate with the attribute set. If you created an xFramework application, you can also make that application selectable from this page.

Attribute Set Name Exclusions

Exclusions:

- You cannot name an attribute with Chinese characters.
- The first character can not be a number or an underscore character.
- The attribute name must not begin with the characters 'SYS', 'IBM' or 'SQL'.
- If you are using a DB2 Database for your xPression database, the attribute name cannot be any of the following:
  - ADMINS
  - GUESTS
  - LOCAL
  - PUBLIC
  - USERS

Attribute Sets: Advanced Tab Options

To access the Advanced tab options, simply click the Advanced tab from the Attribute Sets: General Tab Options, page 76 page. The Advanced tab contains the following options.

Element Name	Description
Usage Notes	Enables users to add notes to content items that use these attributes.
Multi-Value Notes	Enables users to add notes to groups of multi-value attributes.
Approval	Enables the optional workflow of xDesign. Three attributes are automatically built in when you select the Approval option: • Status • Effective Date • Withdrawn Date Do not delete these attributes or you will disable the approval subsystem.

Attributes Sets: Attributes Options

The Attributes tab contains a list of attributes that are currently contained in the attribute set. To access the Attributes tab options, simply click the Attributes tab from the Attribute Sets: General Tab Options, page 76 page.

The Attributes tab contains the following options.

Element Name	Description
Add New	Click this button to create a new attribute and associate it with your attribute set.
Add Existing	Click this button to add an existing attribute to your attribute set.
Remove	Select an attribute from the list and click this button to remove the attribute from the attribute set.
Attributes Name List	Click the name of any attribute in the list to view or edit the attribute settings.

Creating a New Attribute

To add a new attribute:

1. From the Attribute Set Attributes tab, click **Add New** to display the attribute definition page. This page enables you to create an attribute for inclusion in the attribute set.
2. Supply a name for the attribute. It can be 1-255 alphanumeric English characters in length; non-English characters are not supported in attribute names. All attributes must be in uppercase. If you create a lowercase or mixed-case name, xPression will convert it to all uppercase.

3. Select a data type for your attribute. The available data type options are: String, Integer, or Date. The selections you make in this list will change the next option on this page.
   - For String you will be prompted to define String Length. In the String Length box, define the maximum length of the entry a user can add as the attribute value.
   - For Integer you will be prompted to supply a minimum and maximum value. Use these fields if the integer must fall within a certain range.
   - For Date, you will be prompted to supply a start and ending date. Use these fields if the date of an item must fall within a certain range.
4. Select the Multi-Value option if you want designers to define multiple value selections for the attribute. Values are defined in the Valid Values list. Click **Add** to define a new value. Type the value in the provided box.
5. Specify the Default Value if you want the defined attribute to appear be used by default. The default value xDesign uses without prompting the user to enter data. Default values are optional, but for ease of use EMC Document Sciences recommends that you use them as often as possible. Default values are global in nature. If you defined a Default value, that value must appear on the valid value list.
6. Click **Save** or **Update**.

Note: Integers in Java are the same as "long" integers.

Caution: Once an attribute has been added to an attribute set, its properties can be modified but the attribute cannot be removed. If you add a new attribute to an attribute set in an existing category that contains documents, the content items in those documents will assemble differently than before, and you will have to update each content item with a value for the new attribute. Please use careful planning when creating attribute sets to avoid this situation.

Add an Existing Attribute

An existing attribute is an attribute that already exists in your system. To add an existing attribute set:

1. From the Attribute Set Attributes tab, click **Add Existing**. The Attributes tab shows a list of available and selected attributes. The Available Attributes and Selected Attributes lists appear.
2. To add an existing attribute to the attribute set, select an available attribute and click **Add**.
3. When finished, you have the option to click either **Save** or **Preview SQL**. If you click Save, xPression adds the attribute information to your xPression database. If you prefer to manually update your xPression database, click the Preview SQL button, copy the SQL scripts from the viewer window, and manually paste the scripts into your xPression database.

Caution: Once an attribute has been added to an attribute set, its properties can be modified but the attribute cannot be removed. If you add a new attribute to an attribute set in an existing category that contains documents, the content items in those documents will assemble

differently than before, and you will have to update each content item with a value for the new attribute. Please use careful planning when creating attribute sets to avoid this situation.

Chapter 6

Category Management: Data Sources

This chapter examines the Data Sources submenu of Category Management. If you do not see this submenu in the xAdmin interface, you do not have permission to access it. See your xPression administrator for access. The Attributes submenu is documented in Chapter 5, Category Management: Attributes and the Categories submenu is documented in Chapter 4, Category Management: Categories.

About Data Sources and Data Source Groups

A *data source* is the customer data used to create documents in xPression. xPression accepts XML and relational database data sources.

A *data source group* defines the schema, or structure, of one or more xPression data sources. All data sources within a given data source group must share the same schema. Schemas identify the objects, properties, and relationships of the data. xPression has been designed to use the most common database structure, the relational database table and column structure, as its basis for the schema definition. This design enables you to use several different data sources interchangeably.

The customer data source section of the Category Management menu enables you to define your data sources and data source groups. This first step is to define a data source group and a schema for the data sources in the group. Next, add your individual data sources to the group, and define the data reading definition.

xPression natively supports relational database data sources and XML data sources. xPression also supports relational database systems not supported by JDBC drivers, VSAM files, and flat file data through an XML exit. The following section provides information about each of these data source types and methods.

Note: Do not format numbers in your data. Formatting is added through the xPression client applications in your document. For example, use `4400` instead of `4,400`.

About Relational Database Data Sources

In relational databases, xPression derives the schema mapping directly from the database metadata. Because xPression reads your data by field name and table name, you should not change these names in the schema or xPression will be unable to read your data.

Caution: RDB data sources cannot be used with xPresso packages. xPresso packages are only compatible with XML and XQuery data sources.

xPression uses Java Database Connectivity (JDBC) to access your data. Make sure you've set up your JDBC resource on your application server before you configure xPression.

xPression supports the use of tables and views from your relational database. The user ID and password you assign to your JDBC resource, along with the data source's high-level qualifier, determines which tables and views are accessible to xPression. This high-level qualifier is different for each type of database you can use in xPression.

Database Type	High-Level Qualifier
Oracle	The schema is associated with a user or username.
SQL Server	A single user or owner is associated with the schema. A special user known as DBO, unassociated with a single user, is available to anyone who has administrative rights to the DBO user.
DB2	In DB2 one user can be associated with one or more schemas. Each user's default schema is the schema named the same as their username. Users can create schemas with different names as well.

In addition, each of the database types authorizes access in different ways.

Oracle

In Oracle, the schema is created under the username that is specified in the connection pool in your application server settings. By default, the data source group for your database will be able to read the tables associated with username specified in the connection pool.

If you want to access tables created under a different username (and therefore, a different schema), you must identify the username as the *qualifier* for your data source group.

SQL Server

SQL Server enables you to access another user's objects, but not another user's schema. To grant a user access to another user's schema you must explicitly select every object you want to grant access to.

When no qualifier is specified for the data source, xPression will get the schema objects of the JDBC connection for normal users. If the user is a system administrator, xPression will get the DBO objects. If a qualifier is specified, then xPression retrieves the objects from the specified user's schema. When no qualifier is provided at the time the data source definition is set up, the table names are not prefixed in SQL statements in the reading definition.

DB2

Your DB2 schema is not necessarily associated with the username specified in the connection pool. The schema name can be different than the connection pool username.

By default, the data source group for your database will still read the tables associated with username. If you want to access tables created under a different username (and therefore, a different schema), you must identify the username as the *qualifier* for your data source group.

If the user specified in the connection pool is the system administrator, the DBO schema will be used.

About XML Data Sources

For XML data sources, xPression derives the mapping of your data to the xPression schema from a *data reading definition*. A data reading definition uses xPath to define the location of your data for each table and field in the xPression schema. Here is a partial example of an actual data reading definition

```
<?xml version="1.0" encoding="UTF-8"?>
<XMLReadingDef>
<CustomerDelimiter node="CANCELREFUND"  XPath = "/CustomerData/CANCELREFUND" />
  <Table name="CANCELREFUND">
  <RowXPath>/CustomerData/CANCELREFUND</RowXPath>
  <Column name="KEY">
    <ColumnXPath>KEY</ColumnXPath>
    <ColumnValue type="string">Text()</ColumnValue>
  </Column>
  <Column name="NAME">
    <ColumnXPath>NAME</ColumnXPath>
    <ColumnValue type="string">Text()</ColumnValue>
  </Column>
.
.
.
  <Column name="EFFDATE">
    <ColumnXPath>EFFDATE</ColumnXPath>
    <ColumnValue type="dateTime" format="yyyy-MM-dd">Text()</ColumnValue>
  </Column></Table>
</XMLReadingDef>
```

xPression uses data reading definitions to map your data sources “on to” your schemas. If your data source is a relational database, this information is provided automatically in the database metadata. If you use an XML data source, xPression uses xPath to locate the nodes within the data source document tree. For a detailed description of the data reading definition Document Type Definition (DTD), see the *xAdmin Integration Guide*.

About AutoInc Fields

If your data source uses AutoInc fields, each time xPression evaluates this field for customer data, its value will increase by 1.

In older versions of xPression, xPression used only the field name to track when a field was evaluated. This configuration had the potential of creating a problem when several tables share the same field

names. Now, xPression tracks the field with the following information: data source + table name + field name.

XML Includes and Imports

xPression enables you to use XML schema include and import methods.

When using these methods, the master schema file must be placed in the default location: <xPressionHome>/CustomerData/schema

Additionally, all files referenced by the import and include elements must be stored in a path relative to the location of the master schema file. For example:

Master Schema Location: <xPressionHome>/CustomerData/schema/MasterSchema.XSD

Location of referenced file: <xPressionHome>/CustomerData/schema/INCLUDE/include.xsd

Import Element Schema Location Syntax: schemaLocation="./INCLUDE/include.xsd"

Encoding Requirements

You must provide the appropriate encoding information in the incoming data source. In XML data, this information is provided in stream in the XML file. In relational databases, encoding information is defined by the database code page.

If your XML customer data sources contain accented characters, such as å or é, you must add this line at the beginning of your data file or xDesign will be unable to use your data properly:

```
<?xml version="1.0" encoding="ISO-8859-1"?>
```

Unless an encoding is specified at the beginning of an XML document, the XML parser automatically assumes the document uses UTF-8 encoding that stores double-byte characters as 16 bytes, and ASCII characters as single byte.

Note: UTF-16 encoding is not supported for customer data XML.

Table and Field Names

xPression is a case sensitive system that supports only databases with uppercase row and column names. Databases that currently use mixed case table names and field names are not supported by xPression. You can use database views to present uppercase tables and fields to overcome this limitation.

xPression doesn't support databases that contain hyphenated field and column names. Replace the hyphens with an underscore character (_) for best results. For example, a column named *AGENT-ID* could be changed to *AGENT_ID*.

About XML User Exit Data Sources

An XML user exit enables you to use flat files, VSAM files, and other non-JDBC databases with xPression. The XML user exit is a JAVA abstract class named UserExitDataReader. To use the user exit, you are required to write a custom JAVA class that extends the provided abstract class. Your JAVA class should extract data from any source and provides it to xPression in the supported XML format. For more information about creating the JAVA class, see the *xAdmin Integration Guide*.

Once your class is written, you must set up a data source for the user exit. You must define the class name, class path, initialization parameters, and a reading definition. For more information about setting up your user exit data source, see Adding a Relational Data Source to a Data Source Group, page 95.

Caution: User exit XML data sources cannot be used with xPresso packages. xPresso packages are only compatible with XML and XQuery data sources.

About Stylus Studio Integration

Stylus Studio enables you to create custom processes for transforming data from existing, non-XML based systems into XML. xPression enables the transformed XML data to be fed directly into the xPRS server for the seamless execution of production and design time jobs. You can also override your Stylus Studio data source at runtime through batch, web services, or fastpath.

To use you a Stylus Studio transformation as an xPression data source, you must supply your XQuery file name and path to xPression. Some complicated transformations require a large amount of memory and CPU time. Before deploying your Stylus Studio XQuery file in xPression, test it in the Stylus Studio IDE environment to ensure the memory usage and processing performance time is acceptable.

To use an XQuery file as an xPression data source, see Dynamic XML Data with Stylus Studio, page 98, Adding an RDB Stylus Studio Data Source to a Data Source Group, page 99, and Adding a Stylus Studio Data Source with Parameters, page 100.

About XQuery Files

xPression supports all standard XQuery files and XQuery files that use a DataDirect RDB collection. If your XQuery file uses the Stylus Studio “scenario” setting, the file will not work with xPression without additional, manual modifications. See XQuery Files Using the Stylus Studio Scenario Setting, page 86 for more information.

Dynamic primary keys, that is primary keys with values that change each time XQuery is called, are not supported. If the primary key must be dynamic then an XML data source is recommended.

xPression supports the use of the .conv adapter in an XQuery file. Please ensure that the .conv file is referenced by the correct file path. When your XQuery file is ready to be used with xPression, copy it to the XQuery directory located at: <xPressionHome>\CustomerData\XQuery

Caution: Stylus Studio XQuery DB collections use 'schemaName.tableName' as the name of the collection. If you have more than one DB connection that uses the same schema name, ensure that it does not also share table names. If two DB connections share a schema name and table names, xPression will encounter naming conflicts.

You can change the location of the XQuery directory by editing the PredefinedXQueryDir in the xPressionHome.properties file.

XQuery Files Using the Stylus Studio Scenario Setting

If your XQuery file uses the Stylus Studio "scenario" setting, you must perform additional manual configuration.

If you are using an XML data source, you must alter the XML to pass the path and file name of the data source in the XML xpath. To alter the XML:

1. Locate the xpath statement at the beginning of your XQuery file. For example: **`{ for $Transaction in /dataroot/CustomerData/Transaction return`**
2. Supply the path and file name of your XML data source. For example: **`{ for $Transaction in doc("file:///E:/DataSource.XML")/dataroot/CustomerData/Transaction return`**
3. Save and close the XQuery file.

If you are using an RDB data source, you must use a DataDirect RDB collection to provide data base connection information. You must provide the data base connection information when deploying the XQuery file even if you have already provided this information in the Stylus Studio IDE environment.

Overriding Your Stylus Studio Data Source

You can provide dynamic data through your Stylus Studio data source at runtime with Web Services, a fastpath call using the XMLCustomerData parameter, or batch using the –o parameter. For batch and fastpath, simply use the existing functions to pass data to the data source. If you are using Web Services, you can pass an XML input file through the following Web Service calls:

- Document Requester — requestDocumentsByOutputProfile, requestDocumentsWithData
- xReviseRequest — previewWorkItemInPDF
- xPressionRequest — previewPDF, publishAndReturnDocument, publishDocument, publishMSOHTMLDocument

For more information about these Web Service calls, see the *xFramework Developer's Guide*.

document-node() Type Parameter

The document-node() type parameter is now supported. The value for the parameter is a file path or adapter URL such as "adapter:CSV?file://e:/test/AccountsFlatFileTest.txt".

Character Length Limitations for String Data Fields

Field length limitations for string-type fields are determined primarily by the database. Current relational databases supported by xPression provide for up to 4000 characters. XML supports much greater field lengths than relational databases, up to 64k characters, but the specific limit depends on usage.

It is possible to place up to 64k characters in an XML field for xDesign documents, OP field for a generic index, and variables for xEditor, but fields with this much data will probably impair performance so caution is recommended. Extremely long OP fields should be avoided in any case.

The field length set in xAdmin for data source groups is ignored for both RDB and XML data sources. The actual limit is 64k but, as stated above, fields approaching the upper limit will most likely impede performance and should be avoided. Precisely how close to the upper limit can be tolerated depends upon specific implementations and environments and so cannot be determined in advance.

Important Information About xPresso Data Sources and Schemas

The xPresso client application performs less XML validation than does the xPression Server. For this reason, data sources and schemas that work well on the client application may cause errors when deployed on the xPression Server. To avoid these errors, ensure that all of your elements in your data file are fully declared in your schema.

One common area for mistakes is in the use of multiple customer records in a single XML file. If your data file contains multiple records, you must use a root type element to encapsulate the customer records. The root type element must be declared in the schema.

About Schemas

Data source groups contain data sources that share the same schema. Schemas identify the objects, properties, and relationships of the data. xPression has been designed to use the most common database structure, the relational database table and column structure, as its basis for the schema definition. This design enables you to use several different data sources interchangeably.

You can define an xPression schema by:

- Importing it directly from your relational database by providing the JNDI name of the database. xPression gets the schema from the database metadata.
- Importing an XML schema that conforms to the W3C XSD standard. xPression maps complex types as tables, and simple types as fields.
- Creating it manually with xAdmin.

The xPression schema is stored in the content repository.

Supported XSD Types

The following XSD types are supported when describing the database structure.

- schema
- element
- complexType
- simpleType
- attributeGroup
- sequence
- attribute
- import
- include

Namespace is not supported.

Other types are ignored and may result in errors if used.

Locating Schema and Data Reading Definition Files

xPression sample schema files reside in [*drive:*][*path*]\xPression\CustomerData\Schema. Data definition files reside in [*drive:*][*path*]\xPression\CustomerData\ReadingDef. You can place your own XSD schemas and data reading definition files in these locations before you define your data source. You can also "point" to your own folder locations by modifying the PredefinedSchemaDir and PredefinedReadDef attributes in **xPressionHome.properties**, shown below. You can find this file in [*drive:*][*path*]\xPression.

```
xPressionHome=C:\\xPression\\
PredefinedSchemaDir=C:\\xPression\\CustomerData\\Schema\\
PredefinedReadDef=C:\\xPression\\CustomerData\\ReadingDef\\
```

xPression doesn't support browsing on the server so you'll need to know the location of your data source or schema files.

Caution: It is especially important to note that all the data sources in a data source group must share the same schema. Any changes made to your external schemas (whether from the relational database or the XSD) are not automatically reflected in xPression. You must manually update your xPression schema.

xPression requires unique table names. If your XSD uses a hierarchy to present uniqueness, you'll need to manually rename duplicate table names in the xPression schema.

When creating a schema for your XML data source, you must use unique table names. Some XML schemas attempt to use identical table names in different paths, but our automation tools prohibit this use. If your XML schema already uses this method, you must re-create one of the tables manually with a unique name.

Note: xPression does not support spaces or dashes in relational database field names. For example, if your database contains a field such as Effective Date (or Effective-Date) you should rename it Effective_Date.

Data Source Groups List Options

Data source groups are directly linked to a category. You may define multiple data source groups for a single category, but one must be defined as the primary data source group. Only the primary data source group can be used for attribute mapping. The primary table in the primary data source is automatically read by the assembly engine. You can access the data source group options by clicking **Customer Data Sources** from the **Category Management** menu.

The Customer Data Sources list contains a list of all existing data sources. The customer data sources list page contains the following elements.

Element Name	Description
Add Group	Enables you to create a new data source group and add the group to the list. See Data Source Group Options, page 90 and Data Source Group Options, page 90 for more information.
Add xPresso Data Source Group	Enables you to create a new data source group for use with xPresso documents, and add the group to the list. See Creating an xPresso Data Source Group, page 92 for more information.
Add Data Source	Select a data source group from the list and click this button to add a data source to the data source group. See Adding a Relational Data Source to a Data Source Group, page 95, Adding an XML File Data Source to a Data Source Group, page 96 Adding an XML User Exit to a Data Source Group, page 96, and Dynamic XML Data with Stylus Studio, page 98 for more information.
Copy	To create a duplicate data source group, select the data source group you want to copy and click **Copy**. The duplicate data source group appears in the list with the words "Copy of" placed before the original name.
Delete	To delete an existing data source group, select the data source group you want to remove and click **Delete**.

Creating a Data Source Group

To create a data source group:

1. Click **Category Management**, then click **Customer Data Sources**. The Customer Data Sources list appears.
2. Click **Add Data Source Group** to add a new data source group. The Data Source Group page appears.

3. Supply a name for the data source group. The name must be 1-255 alphanumeric characters in length. Parentheses, apostrophes, and quotation marks are not supported.
4. Select the type of data source group you are adding: XSD Schema File or Relational Database.
5. If you are adding a relational database, the Qualifier option appears. This option enables you to define an optional high-level qualifier to help determine which tables and views are accessible by xPression. If you don't provide a qualifier, xPression uses the JDBC user ID.

   If you are adding a relational database the JNDI option appears. Type the name of your JDBC data source. xPression does not allow browsing to this file location, so you must know the location of your data source.
6. In the Schema File Location section, click **Find File** to display a list of the existing schema files. The list of existing schema files appears in a pop up box. This list is populated by all schema files in the following directory:

   [*drive:*][*path*]\xPression\CustomerData \Schema

   You should place your own XSD schema files in these locations before you define your data source. You can also "point" to your own folder locations by modifying the PredefinedSchemaDir attributes in xPressionHome.properties. See Data Source Group Options, page 90 for more information.
7. Now that you have defined your data source group name and schema, you can add the tables and fields in the schema to your data source group. You can add the tables and fields to your data source group using one of three methods: using the Get Schema button, the Get tables button, or Manually Defining Tables for the Data Source Group, page 92.

   The Get Schema button imports all the tables and fields in your schema. After clicking Get Schema, the imported tables appear in the table list. Note that xPression doesn't examine the entire schema. It interprets complex element types as tables, and simple element types as columns.

   The Get Tables button enables you to select which tables to import. This feature is useful if your data source contains tables that you do not plan to use in the current data source group. After clicking Get Tables, xPression displays two lists, Available Tables and Selected Tables.

   To add tables to your data source group, select the desired table in the Available Tables list and click **Add**. Click **Open** to complete importing tables to your data source. xPression returns you to the Data Source page.
8. xPression displays a list of the fields contained in the table. You need to define the primary key for each table you imported. Click one of the tables in the list.
9. Select the check box in the PK column for the field you want to define as primary. The selected field will be shaded in blue. You can select more than one primary key. Click **Update** to save your changes.
10. When you have completed setting up your data source group, click **Save**.

Data Source Group Options

You can use one of two methods to access the data source group options: click **Category Management**, then click **Customer Data Sources**, and click **Add Group** or click the data source group name from the data source group list.

The data source group page contains the following elements:

- **Name** — A 1-255 alphanumeric character name for the Data Source Group. Make the name as descriptive as possible, but don't use parentheses, apostrophes, or quotation marks, xPression doesn't support them.

  Please choose your name carefully because it is very problematic to change it at a later date. If you change the name of an existing data source group, xPression will warn you that the change could have an adverse effect on any documents using the data source group.

- **Schema Source Type** — Select the type of data source group you are adding: XSD Schema File or Relational Database.

- **Qualifier** — (Relational Database Type) This option appears if you selected a Relational Database schema type. You can define an optional high-level qualifier to help determine which tables and views are accessible by xPression. If you don't provide a qualifier, xPression uses the JDBC user ID. See About Relational Database Data Sources, page 81 for more information.

- **JNDI Name** — (Relational Database Type) Type the name of your JDBC data source. xPression does not allow browsing to this file location, so you must know the location of your data source.

- **Schema File Location** — Click **Find File** to display a list of the existing schemas. File paths and names are case-sensitive on UNIX operating systems. xPression supports only W3C XSD schema files.

  xPression sample schema files reside in [*drive:*][*path*]\xPression\CustomerData \Schema. You should place your own XSD schemas in these locations before you define your data source. You can also "point" to your own folder locations by modifying the PredefinedSchemaDir attributes in xPressionHome.properties, shown below.

  You can find this file in [*drive:*][*path*]\xPression.

  xPressionHome=C:\\xPression\\

  PredefinedSchemaDir=C:\\xPression\\CustomerData\\Schema\\

- **Get Schema** — The Get Schema button imports all the tables and fields in your schema. After clicking Get Schema, the imported tables appear in the table list. Note that xPression doesn't examine the entire schema. It interprets complex element types as tables, and simple element types as columns.

- **Get Tables** — The Get Tables button enables you to select which tables to import. This feature is useful if your data source contains tables that you do not plan to use in the current data source group.

- **Tables List** — Displays the tables that were added to the data source group after clicking Get Schema, Get Tables, or manually adding tables to the data source group. This table enables you to manually add tables to the data source group. See Manually Defining Tables for the Data Source Group, page 92 for more information.

Manually Defining Tables for the Data Source Group

To manually add tables to your data source group:

1. From the Data Source Group page, locate the Table list at the bottom of the page. The table list displays all tables that have been added to the data source group. If you have not yet added any tables to the data source group, this list will be empty. Click **Add.**
2. The Add Table page appears. The Add Table page enables you to create the new table and add fields to the table.
3. Supply an alphanumeric name for the table. The name can include spaces, but it may not consist entirely of spaces.
4. You can use the Add Field and Remove Field functions to define and remove fields from the table. See Adding Fields to a Table, page 92 for more information.
5. Click **Update** to save your changes.
6. The last remaining steps in your data source group definition is to set the primary table for the data source group and the primary key for each table. The primary table in the primary data source is automatically read by the xPression assembly engine. To set the primary table, select the check box next to the table you want to define as the primary table and click **Set Primary**. The primary table is shaded in blue.
7. Click **Save**.

Adding Fields to a Table

To add a field to a table:

1. From the Data Source Group page, locate the Table list at the bottom of the page. If you have not yet added any tables to the data source group, this list will be empty. Click **Add to create a new table or click a table name from the list.**
2. The Add Table page appears. The Add Table page enables you to create the new table and add fields to the table. Click **Add Field**. An empty field row appears in the list.
3. In the Name box, supply a name for the table field.
4. In the Type list, define the field type as Integer, Float, String, or Date.
5. In the Length box, define the field length.
6. If you want to designate the field as the primary key, select the PK option.
7. To add another table, click Add Field and repeat steps 3-6.
8. Click **Update**.

Creating an xPresso Data Source Group

xDesign and the xPresso clients handle data sources in different ways. xPresso data sources are based on schema files. Because of the differences, there are two types of data source groups. The

xPresso data source group should be used only with xPresso documents, and should not be used with xDesign documents. You can use a non-xPresso data source group with xPresso documents, but there may be some features (such as xResponse package version selection) that won't be available if you do.

Note: When publishing, if you use the option to provide the xPresso package name in a data file, you must ensure that the data file reference contains the package name without the file suffix (.xword, xindd, or xdrwv). For more information, see the *xDashboard User Guide*.

To create an xPresso data source group:

1. Click **Category Management**, then click **Customer Data Sources**. The Customer Data Sources list appears.
2. Click **Add xPresso Data Source Group** to add a new xPresso data source group. The Customer Data Sources: Add page appears.
3. Supply a name for the xPresso data source group. The name must be 1-255 alphanumeric characters in length. Parentheses, apostrophes, and quotation marks are not supported.
4. Select the location of the schema file: **From Server**, or **From Local Machine**.
5. Click **Select File** to locate the schema file.

   If you selected From Server, a window appears containing a list of all the schema files currently stored on the server. Select the file and click **Open**.

   If you selected From Local Machine, the Windows Choose File dialog box appears. Browse to locate and select the schema file, and click **Open**.
6. Click **Show Schema** to display the selected schema in the box at the bottom of the page.
7. Type the xPath for the delimiter of the schema file. The delimiter is the highest repeating record in the file, which separates the XML into separate customer records. The xPath should follow xPath specifications. For example, /CustomerData/Customer
8. Type the key for the xPath. The key uniquely identifies a customer record. For example, /CustomerData/Customer/AccountNumber. The xPath should follow xPath specifications, and can use xPath functions. For example, /CustomerData/Customer/concat(lastName, " ", firstName).
9. When you have completed setting up your xPresso data source group, click **Save**.

xPresso Data Source Group Options

You can use one of two methods to access the xPresso data source group options: click **Category Management**, then click **Customer Data Sources**, and click **Add xPresso Data Source Group**, or click the xPresso data source group name from the data source group list.

The xPresso data source group page contains the following elements.

Element Name	Description
Name	A 1-255 alphanumeric character name for the xPresso Data Source Group. Make the name as descriptive as possible, but don't use parentheses, apostrophes, or quotation marks, xPression doesn't support them. Please choose your name carefully because it is very problematic to change it at a later date. If you change the name of an existing data source group, xPression will warn you that the change could have an adverse effect on any documents using the data source group.
Schema File	Select the location of the schema file: **From Server**, or **From Local Machine**. Click **Select File** to select the file on the server, or locate and select the file on the local machine.
Delimiter xPath	Type the highest repeating record in the file, which separates the XML into separate customer records. The xPath should follow xPath specifications.
Key xPath	Type the xPath that uniquely identifies a customer record. For example, /CustomerData/Customer/AccountNumber. The xPath should follow xPath specifications, and can use xPath functions.
Show Schema	The Show Schema button displays the schema in the box at the bottom of the page.

Adding Data Sources to a Data Source Group

You must add data sources to your data source groups. You can add any combination of relational databases, XML data sources, and XML user exit data sources. Remember that each data source you add to the group must share the same schema as the other data sources in the group.

Note: If you are using an XML user exit in one of your data source groups, the user exit must be defined as the primary data source in the group.

You can add the following types of data sources:

- Adding a Relational Data Source to a Data Source Group, page 95
- Adding an XML File Data Source to a Data Source Group, page 96
- Adding an XML User Exit to a Data Source Group, page 96
- Dynamic XML Data with Stylus Studio, page 98

About Reading Definitions

The data reading definition maps your XML data source to the xPression schema defined in your data source group. A data reading definition uses xPath to define the location of your data for each table and field in the xPression schema.

To learn how to manually create a data reading definition, see Customizing the Data Reading Definition, page 105. If you have already created a reading definition, or have existing data reading definitions defined on your server, you can import them into xPression using the Get Reading Definition function.

If you create a reading definition, make sure the data definition files resides in <xPressionHome>\xPression\CustomerData\ReadingDef.

You should place your own data reading definition files in this location before you define your data source. You can also "point" to your own folder locations by modifying the PredefinedReadDef attribute in **xPressionHome.properties**, shown below. You can find this file in your xPression installation directory.

```
xPressionHome=C:\\xPression\\
PredefinedSchemaDir=C:\\xPression\\CustomerData\\Schema\\
PredefinedReadDef=C:\\xPression\\CustomerData\\ReadingDef\\
```

Adding a Relational Data Source to a Data Source Group

To add a relational data source to the data source group:

1. From the data source list page, select the data source group for which you want to add a data source, and click **Add Data Source**. The Add Customer Data Source page appears. The Add Customer Data Source page contains two tabs: General and Mapping.

   The Mapping tab is unavailable when adding a relational database data source.

2. In the Name box, define a name for the data source. The name must be between 1 and 255 alphanumeric characters in length.
3. In the Type list, select **Relational Database**.
4. In the Qualifier box, enter an optional high-level qualifier. If you don't provide a qualifier, xPression uses the JDBC user ID.
5. In the JNDI Name box, type the name of your JDBC data source in **JNDI Name**. xPression does not allow browsing to this file location, so you must know the location of your data source.
6. Click **Save** when finished.

Adding an XML File Data Source to a Data Source Group

To add an XML file data source to the data source group:

1. From the data source list page, select the data source group for which you want to add a data source, and click **Add Data Source**. The Add Customer Data Source page appears. The Add Customer Data Source page contains two tabs: General and Mapping.
2. In the Name box, define a name for the data source. The name must be between 1 and 255 alphanumeric characters in length.
3. For regular data sources, select **XML** from the Type list. When you select XML, a new box named **XML Source** appears. In the XML Source list there are two types of XML data sources listed: File and User Exit. Select **File**.

   For xPresso data sources, simply select **File** from the XML Source drop-down list.
4. In the Customer Data Location box, type the location of your data source. The path to your data source is case sensitive. xPression supports UNC naming conventions. When adding a data source, xAdmin doesn't validate that the data sources use the same schema. Ensure that the data sources you want to group have the same schema before you add them.
5. The next step is to set up your data reading definition. If you have not created a reading definition for your data source, you can create it in one of two ways:
   - Using the Auto Map feature to automatically create a reading definition for simple XML and XSD inputs. See Auto Mapping Your Data to xPression, page 103 for instructions.
   - Using the Auto Map feature to automatically create a reading definition, then manually refining it for more complex input. See Auto Mapping Your Data to xPression, page 103 and Customizing the Data Reading Definition, page 105 for instructions.

   For a detailed description of the data reading definition Document Type Definition (DTD), see the *xAdmin Integration Guide*.
6. When you have your reading definition files in place, click **Get Reading Definition**.
7. xPression displays a pop-up window with a list of all reading definitions that reside in the following directory: <xPressionHome>\xPression\CustomerData\ReadingDef

   Select a reading definition and click **Open**.
8. The reading definition text displays in the reading definition edit box. Click **Save**.

Note: Customer Data Location path names can use either backward or forward slashes. xPression displays the path name with forward slashes and processes them according to the appropriate system standard.

Adding an XML User Exit to a Data Source Group

To add an XML User Exit data source to the data source group:

1. From the data source list page, select the data source group for which you want to add a data source, and click **Add Data Source**. The Add Customer Data Source page appears. The Add Customer Data Source page contains two tabs: General and Mapping.

2. In the Name box, define a name for the data source. The name must be between 1 and 255 alphanumeric characters in length.
3. For regular data sources, select **XML** from the Type list. When you select XML, a new box named **XML Source** appears. In the XML Source list there are two types of XML data sources listed: File and User Exit.

   For xPresso data sources, simply select **User Exit** from the XML Source drop-down list.
4. Select **User Exit**. When you select User Exit, three user exit specific options appear. The Class Name, Class Path, and User Exit Initialization Parameter options appear.
5. In the Class Name box, type the name of the JAVA class you created that was derived from the UserExitDataReader abstract class.
6. In the Class Path box, supply the class path for the new JAVA class. This class path must be unique. Do not reuse the class path for the user exit abstract class. The classname is the same as the package name in the class file.
7. The User Exit Initialization Parameter table enables you to pass data to the JAVA class. You can define any data that you want in the initialization parameters. The ability to pass specialized data to the class enables you to generalize the code for your JAVA class.

   Click **Add** to add a new parameter. Supply the parameter name and value in the provided boxes.
8. The next step is to set up your data reading definition. The data reading definition maps your XML data source to the xPression schema defined in your data source group. A data reading definition uses xPath to define the location of your data for each table and field in the xPression schema. If you have not created a reading definition for your data source, you can create it in three different ways:
   - Using the Auto Map feature to automatically create a reading definition for simple XML and XSD inputs. See Auto Mapping Your Data to xPression, page 103 for instructions.
   - Using the Auto Map feature to automatically create a reading definition, then manually refining it for more complex input. See Auto Mapping Your Data to xPression, page 103 and Customizing the Data Reading Definition, page 105 for instructions.

   For a detailed description of the data reading definition Document Type Definition (DTD), see the *xAdmin Integration Guide*.
9. When you have your reading definition files in place, click **Get Reading Definition**.

10. xPression displays a pop-up window with a list of all reading definitions that reside in the following directory: <xPressionHome>\xPression\CustomerData\ReadingDef

    Select a reading definition and click **Open**.

11. The reading definition text displays in the reading definition edit box. Click **Save**.

Note: Initialization parameters are optional. For example, you could use the parameters to supply the JAVA class with the name of the data source you want to use. This enables you to write a JAVA class that is generic with regard to data sources, and can be reused as many times as necessary.

Dynamic XML Data with Stylus Studio

To add an XML file data source to the data source group:

1. From the data source list page, select the data source group for which you want to add a data source, and click **Add Data Source**. The Add Customer Data Source page appears.
2. In the Name box, define a name for the data source. The name must be between 1 and 255 alphanumeric characters in length.
3. For regular data sources, select **XML** from the Type list. When you select XML, a new box named **XML Source** appears.

   For xPresso data sources, simply select **User Exit** from the XML Source drop-down list.

4. From the XML Source list, select **Stylus Studio — xQuery**.
5. In the XQuery File box, type the path and filename for the XQuery file or click Find File to select the file from a list. When you click Find File, xPression displays a pop-up box that lists all XQuery files that reside in the XQuery directory located at: <xPressionHome>\CustomerData\XQuery. Ensure that your XQuery file defines the external variable name as $xPRSXMLInput..
6. In the Parameters section, the xPRSXMLInput parameter should appear. The value for this parameter is the path and filename for the static XML file that is used when one of our software components cannot override the XML. For example, xDesign is not able to override XML files. xResponse and xRevise cannot override unless you are using the XMLCustomerData fastpath parameter. When XML is overridden through Web Services, fastpath, or batch, this input XML file is ignored and replaced by the dynamic XML file override.

   If your XQuery data source is transforming XML data, this parameter value reflects the path and file name of your XML data file. All of the data is provided in this file.

   If your XQuery data source is retrieving data from a relational database, this parameter value should be the path and file name to the XML file that contains the list of records you want to process.

   If your XQuery data source is transforming data from a comma delimited file, this parameter value should be the path and file name to the XML file that contains the path and file name to the comma delimited file.

   Or the XML file could be a combination of any of these scenarios.

7. The next step is to set up your data reading definition. If you have not created a reading definition for your data source, you can create it in three different ways:
   - Using the Auto Map feature to automatically create a reading definition for simple XML and XSD inputs. See Auto Mapping Your Data to xPression, page 103 for instructions.
   - Using the Auto Map feature to automatically create a reading definition, then manually refining it for more complex input. See Auto Mapping Your Data to xPression, page 103 and Customizing the Data Reading Definition, page 105 for instructions.

   For a detailed description of the data reading definition Document Type Definition (DTD), see the *xAdmin Integration Guide*.
8. When you have your reading definition files in place, click **Get Reading Definition**.
9. xPression displays a pop-up window with a list of all reading definitions that reside in the following directory: <xPressionHome>\xPression\CustomerData\ReadingDef

   Select a reading definition and click **Open**.
10. The reading definition text displays in the reading definition edit box. Click **Save**.

Note: If you are using Microsoft Internet Explorer 8, you will not be allowed to type a path directly into the XQuery File field; you must use the Find File button to locate the file.

Adding an RDB Stylus Studio Data Source to a Data Source Group

To add an XML file data source to the data source group:

1. From the data source list page, select the data source group for which you want to add a data source, and click **Add Data Source**. The Add Customer Data Source page appears.
2. In the Name box, define a name for the data source. The name must be between 1 and 255 alphanumeric characters in length.
3. In the Type list, select **XML**. When you select XML, a new box named **XML Source** appears.
4. From the XML Source list, select **Stylus Studio**.
5. In the XQuery File box, type the path and filename for the XQuery file or click Find File to select the file from a list. When you click Find File, xPression displays a pop-up box that lists all XQuery files that reside in the XQuery directory located at: <xPressionHome>\CustomerData\XQuery

6. If your XQuery is an RDB XQuery, the Collections options will appear. Supply a user name, user password, and Database URL for your RDB database collection. The possible URL values are:

   ```
   jdbc:docscience:db2://server:port
   jdbc:docscience:oracle://server:port
   jdbc:docscience:sqlserver://server:port
   ```

7. The next step is to set up your data reading definition. If you have not created a reading definition for your data source, you can create it in three different ways:
   - Using the Auto Map feature to automatically create a reading definition for simple XML and XSD inputs. See Auto Mapping Your Data to xPression, page 103 for instructions.
   - Using the Auto Map feature to automatically create a reading definition, then manually refining it for more complex input. See Auto Mapping Your Data to xPression, page 103 and Customizing the Data Reading Definition, page 105 for instructions.

   For a detailed description of the data reading definition Document Type Definition (DTD), see the *xAdmin Integration Guide*.
8. When you have your reading definition files in place, click **Get Reading Definition**.
9. xPression displays a pop-up window with a list of all reading definitions that reside in the following directory: <xPressionHome>\xPression\CustomerData\ReadingDef

   Select a reading definition and click **Open**.
10. The reading definition text displays in the reading definition edit box. Click **Save**.

Note: If you are using Microsoft Internet Explorer 8, you will not be allowed to type a path directly into the XQuery File field; you must use the Find File button to locate the file.

Adding a Stylus Studio Data Source with Parameters

To add an XML file data source to the data source group:

1. From the data source list page, select the data source group for which you want to add a data source, and click **Add Data Source**. The Add Customer Data Source page appears.
2. In the Name box, define a name for the data source. The name must be between 1 and 255 alphanumeric characters in length.
3. In the Type list, select **XML**. When you select XML, a new box named **XML Source** appears.

4. From the XML Source list, select **Stylus Studio**.
5. In the XQuery File box, type the path and filename for the XQuery file or click Find File to select the file from a list. When you click Find File, xPression displays a pop-up box that lists all XQuery files that reside in the XQuery directory located at: <xPressionHome>\CustomerData\XQuery
6. If you define an XQuery file that uses parameters, the Parameters options appear. The Parameters options appear when you select an XQuery file that uses parameters. Supply the parameter value in the Value box.
7. The next step is to set up your data reading definition. If you have not created a reading definition for your data source, you can create it in three different ways:
   - Using the Auto Map feature to automatically create a reading definition for simple XML and XSD inputs. See Auto Mapping Your Data to xPression, page 103 for instructions.
   - Using the Auto Map feature to automatically create a reading definition, then manually refining it for more complex input. See Auto Mapping Your Data to xPression, page 103 and Customizing the Data Reading Definition, page 105 for instructions.

   For a detailed description of the data reading definition Document Type Definition (DTD), see the *xAdmin Integration Guide*.
8. When you have your reading definition files in place, click **Get Reading Definition**.
9. xPression displays a pop-up window with a list of all reading definitions that reside in the following directory: <xPressionHome>\xPression\CustomerData\ReadingDef

   Select a reading definition and click **Open**.
10. The reading definition text displays in the reading definition edit box. Click **Save**.

Note: If you are using Microsoft Internet Explorer 8, you will not be allowed to type a path directly into the XQuery File field; you must use the Find File button to locate the file.

Renaming Data Sources

xPression enables you to rename data sources after you create them. However, if you do rename a data source it is imperative that you notify all xPression client application users. If their documents use the renamed data source, they must regenerate the document XML and update all document versions. For this reason, you might consider copying the data source, rather than renaming it.

Adding Sources to an xPresso Data Source Group

You must add data sources to your xPresso data source groups. You can add XML file data sources, XML user exit data sources, or Stylus Studio - xQuery data sources. Remember that each data source you add to the group must share the same schema as the other data sources in the group.

The steps for adding each type of data source to an xPresso group are similar to the steps for adding them to a regular data source group; however, there are differences. Make sure you use the steps in this section when added data sources to xPresso data source groups.

Adding an xPresso XML File Data Source

To add an XML file data source to the xPresso data source group:

1. From the data source list page, select the xPresso data source group for which you want to add a data source, and click **Add Data Source**. The Customer Data Sources: Add page appears.
2. Type a name for the data source. The name must be between 1 and 255 alphanumeric characters in length.
3. Select **File** from the XML Source drop-down list.
4. Type the location of your data source. The path to your data source is case sensitive. xPression supports UNC naming conventions. When adding a data source, xAdmin doesn't validate that the data sources use the same schema. Ensure that the data sources you want to group have the same schema before you add them.
5. Click **Save**.

Adding an xPresso XML User Exit Data Source

To add an XML User Exit data source to the xPresso data source group:

1. From the data source list page, select the xPresso data source group for which you want to add a data source, and click **Add Data Source**. The Customer Data Sources: Add page appears.
2. Type a name for the data source. The name must be between 1 and 255 alphanumeric characters in length.
3. Select **User Exit** form the XML Source drop-down list. Three user exit-specific options appear: Class Name, Package, and User Exit Initialization Parameter.
4. Type the name of the JAVA class you created that was derived from the UserExitDataReader abstract class.
5. Type the package name in the class file for the new JAVA class. This class path must be unique. Do not reuse the class path for the user exit abstract class.
6. The User Exit Initialization Parameter table enables you to pass data to the JAVA class. You can define any data that you want in the initialization parameters. The ability to pass specialized data to the class enables you to generalize the code for your JAVA class.

   Click **Add** to add a new parameter. Supply the parameter name and value in the provided boxes.
7. Click **Save**.

Adding an xPresso Stylus Studio Data Source

To add an XML file data source to the data source group:

1. From the data source list page, select the data source group for which you want to add a data source, and click **Add Data Source**. The Customer Data Sources: Add page appears.
2. Type a name for the data source. The name must be between 1 and 255 alphanumeric characters in length.

3. Select **Stylus Studio - xQuery** from the XML Source drop-down list.
4. Type the path and filename for the XQuery file, or click **Find File** to select the file from a list. When you click Find File, xPression displays a pop-up box that lists all XQuery files that reside in the XQuery directory located at: <xPressionHome>\CustomerData\XQuery
5. If you define an XQuery file that uses parameters, the Parameters options appear. The Parameters options appear when you select an XQuery file that uses parameters. Supply the parameter value in the Value box.
6. Click **Save**.

Note: If you are using Microsoft Internet Explorer 8, you will not be allowed to type a path directly into the XQuery File field; you must use the Find File button to locate the file.

Renaming Data Sources

xPression enables you to rename data sources after you create them. However, if you do rename a data source it is imperative that you notify all xPression client application users. If their documents use the renamed data source, they must regenerate the document XML and update all document versions. For this reason, you might consider copying the data source, rather than renaming it.

Auto Mapping Your Data to xPression

The Auto Map utility in xPression starts with an XSD file and extracts the most likely Reading Definition for the XML data. In most cases, xPression is able to correctly map the data elements to the database schema. If the results of the Auto Map are not exactly what you want, you can manually map them with the Mapping functions in the Mapping tab.

Tip: You can set this property in any xPression properties file. This property enables you to define the default setting for Automapping primary and foreign keys in xAdmin. You can set this value to None, Spec, and Auto. DefaultKeyValue = [Auto | Spec | None]

Before xPression can automatically generate a data reading definition, you must:

- Ensure all elements in your data contain data values. xPression will not map elements without values.
- Ensure that your XML is valid.
- Have a valid reference in your data source file to the XSD schema.

Note: It is important to note that your sample XSD must contain the complete definition of the data that is in your database. If an element is missing, xPression will not be able to map correctly and it may appear that some fields are not defined they way you want them to be.

To use the Auto Map utility:

1. From the data source list page, click the data source for which you want to automap your data. The data source page appears.
2. Ensure you have supplied the location of your XML data in the Customer Data Location box.

3. Click **Auto Map** to start the Auto Map Utility. The Auto Map utility appears in a pop-up page that displays the tables and fields from your XML file. The Automap utility displays the tables in your data source, options for defining the primary and foreign keys, and a list of fields in the data source.

   From this page, you can define the Primary Key (PK) and Foreign Key (FK) for each table. Most database management systems allow you to have more than one key so that you can sort records in different ways. The primary key must hold a unique value for each record, and the foreign key identifies records in different tables. Generally, the PK from one table is linked to the FK in another table.

4. To specify how you want to identify your PK and FK, click the PK or FK hyperlink and select a value in the PK or FK drop-down lists for each table. For the PK and FK, you can select Auto or None. For the PK, you can also select Spec.

   You can select the following values.

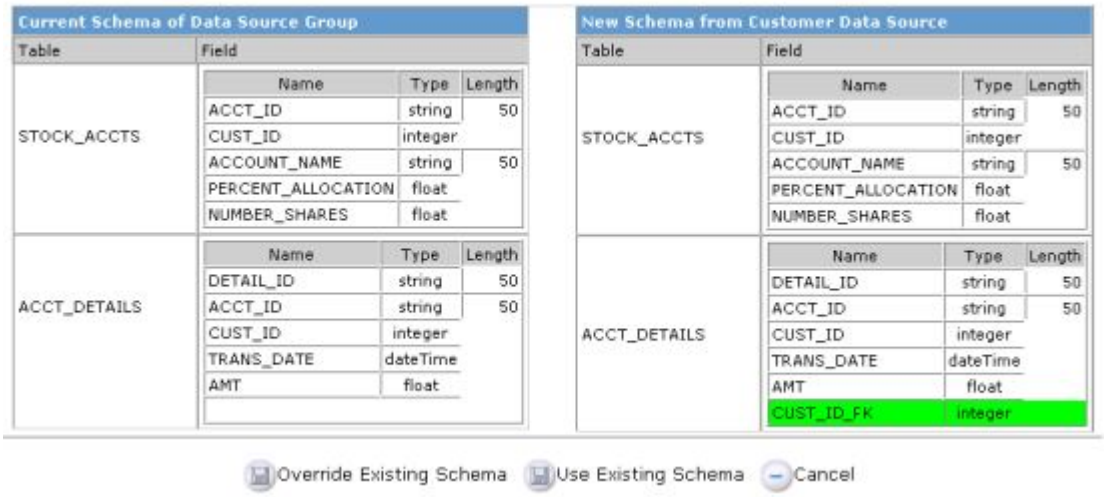
Option	Definition
Auto	This option automatically generates the PK or FK field in the table. The naming convention for the field is TableName_PK.
Spec (PK only)	You can only select this option for the PK. Selecting Spec indicates that the PK for this table already exists in the data source. After selecting this option, you must identify which field is the PK by selecting the check box in the PK column.
None	This option indicates that no PK or FK is needed for this table.

   In the following example, the PK is defined as Spec, and the CUST_ID is identified as the primary key for the ACCT_DETAILS table. The corresponding STOCK_ACCTS table contains a definition for the FK using the Auto option. If you use Auto for the FK, you should have a corresponding PK field in another table.

   xPression will create an FK field in the table named after the defined PK field in the corresponding table. This scenario will create a new field in the STOCK_ACCTS table named CUST_ID_FK.

5. Click **Insert** to insert the new FK field into your data source. Before inserting the field, xPression displays the existing schema next to the new schema with the added FK field. New fields are highlighted in green.

A comparison of the existing schema and the new schema that will be created



.

If your new schema contains a mismatch with your old schema, xPression highlights the fields in orange.

6. To preserve the schema already defined in your data source group, click **Use Existing Schema**.

   To use the new schema generated by xPression click **Override Existing Schema**. If you accept the xPression mapping by overriding the schema, xPression automatically maps every table in your data source, regardless of what you've defined in your schema. This will not affect your processing times.

7. When finished, you must reset the primary table for your data source. The new data reading definition appears in the Data Reading Definition text box.

Customizing the Data Reading Definition

If your data is complex, or if you'll be using XML for batch processing, you'll need to use the Mapping tab utility to refine the data reading definition generated by xPression. Before you begin, make sure your browser can run ActiveX controls and scripts.

The verify the security settings:

1. Open Internet Explorer and select **Internet Options** in the **Tools** menu.
2. Click the **Security** tab, then click **Custom Level** to open the Security Settings dialog box.
3. Scroll down to **Automatic prompting for ActiveX controls** and select **Enable**.
4. Scroll down to **Initialize and script ActiveX controls not marked as safe** and select **Enable**.
5. Scroll further down to **Run ActiveX controls and plug-ins** and ensure that **Enable** is selected.
6. Click **OK**.

There are a number of ways you can customize your data reading definition:

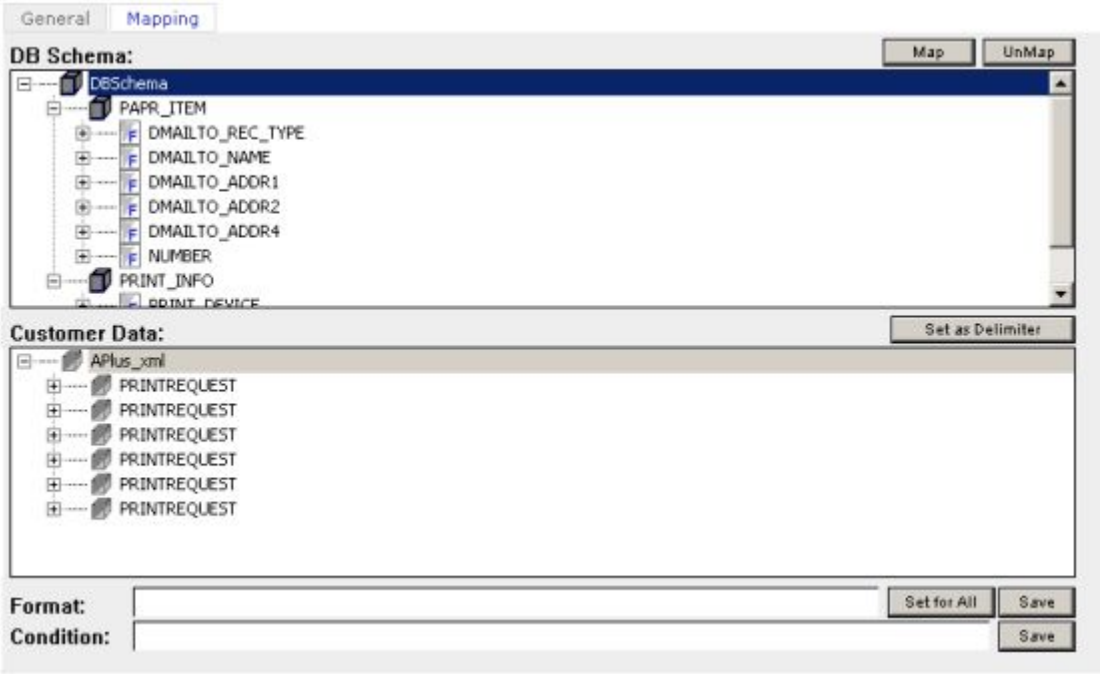
- Manually Updating the Mapping of a Table, page 106
- Manually Updating the Mapping of a Field, page 107
- Setting the Customer Delimiter, page 107
- Changing the Default Date Format, page 108

Manually Updating the Mapping of a Table

To manually update table mapping:

1. Click the **Mapping** tab in the "Customer Data Sources: Add " page.
2. Double-click **DBSchema** and the nodes, and their elements, appear. Likewise, double-clicking the name of your data source in the Customer Data page displays the records it contains.

   The Mapping tab contains two lists. The DB Schema list contains nodes in the schema. The Customer Data list contains record data



3. Click **Map** and a green check mark appears next to the mapped items.

xPression saves this information in the content repository, and displays the results of it in the Data Reading Definition window on the General tab.

Manually Updating the Mapping of a Field

To manually update field mapping:

1. Click the **Mapping** tab in the "Customer Data Sources: Add" page.
2. Select a node or element in the DB Schema page, then select the table you want to map it to in the Customer Data page.
3. Click **Map** and a green check mark appears next to the mapped items. Make sure you map to your data, not the element name. xPression saves this information in the content repository and displays the results of it in the Data Reading Definition window on the General tab.

Setting the Customer Delimiter

If you're going to use this data in xPression Batch, you must set a *delimiter* for each record. A delimiter separates, or groups, all the records used for a single customer assembly within an XML stream. You can set the delimiter by adding it in the Mapping tab of the Customer Data Sources page, or by modifying the Reading Definition file. This section explains how to set the customer delimiter.

Note: The delimiter is used only by xPression Batch; both xDesign and xResponse ignore it.

The example shown in the figure below illustrates how the delimiter <CustomerRecord> looks in a simple XML file.

```
<xml>
 <CustomerRecord>
  <TableA>
   <Field>
  </TableA>
  <TableB>
   <Field>
  </TableB>
 </CustomerRecord>
 <CustomerRecord>
  <TableA>
   <Field>
  </TableA>
  <TableB>
   <Field>
  </TableB>
 </CustomerRecord>
</xml>
```

Adding a Customer Delimiter Through the Mapping Tab

To add the delimiter through the Mapping tab:

1. Click the **Mapping** tab in the "Customer Data Sources: Add" page.

2. Select a column in the first record and click **Set as Delimiter**. You only need to do this for the first record. xPression places a D next to the column you marked.
3. xPression inserts the delimiter line into the schema after the <ReadingDef> element:

```
<CustomerDelimiter XPath="/CustomerList/POLICY" node="POLICY"/>
```

Adding the Customer Delimiter Directly to the Reading Definition

To add the delimiter directly to the Reading Definition, you should be very familiar with XML XPath. To directly add the delimiter type the delimiter text into the data reading definition edit box on the data source page and click **Save**.

To make the editing process a little easier, you can copy the text from the data reading definition edit box and paste it into a text editor. You can then make your changes in the text editor and save the text file to the data reading definition directory. Then, click **Get Reading Definition** to get the updated file. Verify the accuracy of the file, and then save the changes.

Changing the Default Date Format

xPression enables you to specify different date formatting for every date element in your data stream.

1. Click the **Mapping** tab in the Customer Data Sources page.
2. Select the date field you want to override, then type your new date format in the **Format** field. xPression uses the default date format recommended by the W3C: **yyyy-MM-dd**.
3. If you use a consistent date format throughout your data, define your date format for one date field then click **Set for All** to apply it to all date fields.

Configure Default Primary and Foreign Keys

xPression enables you to define the selection mode of Primary and Foreign keys for your tables during auto-mapping. This was a cumbersome task for very large table structures, because it required users to manually define this setting for each table. To resolve this difficulty, xPression has enabled you to specify a global default value for Primary and Foreign keys.

To set the global default value, complete the following steps:

1. Add the following parameter to any .properties file located in the xPressionHome directory on your server: DefaultKeyValue=
2. Supply a value for this parameter. Valid values are “None” and “Auto”. Use “None” if your table has no need for keys. Use “Auto” if you want to automatically generate the keys. For example: DefaultKeyValue=Auto
3. Save the .properties file.

If this parameter does not contain a value or is missing entirely from your .properties files, xPression will use “Auto” by default.

Chapter 7

Lifecycle

The xPression Lifecycle feature enables you to connect your xPression document design process to a Documentum work flow. xPression still supports its original built-in workflow capabilities, but only one workflow system for document approval can be enabled on the server at one time. This feature does not affect workflow for xResponse, xRevise, or a custom IDDK correspondence application. It only affects xDesign content item approval, and xDesign and xPresso document approval. When the Life Cycle feature is enabled, content item and document approval will be performed through Life Cycle, but xResponse, xRevise, and any custom correspondence application will use the built-in xPression workflow capabilities. To learn how to associate a Lifecycle definition with a category, see Categories: General Tab Options, page 45.

In this chapter, we will detail the Lifecycle user interface, configuration, and operation.

If you do not see this menu in the xAdmin interface, you do not have permission to access it. See your xPression administrator for access.

How Lifecycle Works

After configuring your xPression Server to use Documentum workflow (see Configuring Lifecycle on Your xPression Server, page 112), you will see the Lifecycle option available in the Categories menu in xAdmin. This feature enables you to define the chain of document statuses that enable a document to be approved. These statuses must relate to the statuses configured in your Documentum workflow. Through the use of the xPression Activity Templates, you can associate your Documentum Process Builder workflow with an xPression document. Through the General tab of your Category definition (Categories: General Tab Options, page 45), you can associate your category with a Lifecycle. With these associations and the Lifecycle statuses in place, Documentum can then guide your document through the workflow by updating the Lifecycle status at each stage. Once the document has been submitted through Documentum, it cannot be edited until it is approved or rejected. When a document successfully completes the Documentum workflow process, all content items in the document are approved. Before you can preview an xDesign document through the Documentum workflow, you must generate XML for the document through xDesign.

Configuring Lifecycle on Your xPression Server

xPression supports both the original built-in xPression *workflow* system and Documentum Process Builder *Lifecycle* for document approval, but only one system can be active at a time. To configure which system is active, you must configure the systemconfig.properites file located in the xPressionHome directory. After configuring Life Cycle for your xPression Server, you will notice the following changes to the xAdmin interface:

- The Life Cycle option will appear in the Categories menu in xAdmin
- A Life Cycle drop-down list will appear on the General tab of your Category definition. This list enables you to associate a category with a Life Cycle.
- The Workflows tab in your Category definition will no longer show entries for your client applications.

xPression retains your access rights and xPression built-in workflow settings when you configure the server for Documentum workflow. If you reconfigure the server for xPression workflow at a later date, your original settings will reappear.

To configure the properties file, complete the following steps:

1. Open **systemconfig.properties** for editing.
2. There are two lines that contain the workflowImplementation property. One line is "commented out", meaning that it is preceded by the pound sign (#). The commented line is ignored by the server. By default, the built-in xPression workflow in enabled.
3. To disable the built-in xPression workflow and enable the Documentum workflow, type a pound sign (#) at the beginning xPression line as follows:

   ```
   #workflowImplementation=="xPression"
   ```

4. Next, remove the pound sign (#) from the Documentum line. The line should now read:

   ```
   workflowImplementation=="Documentum"
   ```

5. Save and close the file, then restart the xPression server.

The Lifecycle Interface

The Lifecycle interface enables you to add a Lifecycle definition to xAdmin. The Lifecycle option is available from the Categories menu on the left side of the xAdmin interface. Click **Lifecycle** to see the Lifecycle list. This list displays all existing Lifecycle definitions on the server. From this page you can add a new Lifecycle definition, copy an existing definition, or delete a definition. To create a new Lifecycle definition, click the **Add** button.

For each Lifecycle definition, you must define the name of the Lifecycle and each Document Status.

- **Name.** Type a name for the life cycle. The name must be no longer than 255 characters.
- **Document Status List.** This list enables you to create a status for each stage in the Documentum workflow. Each status that appears in this list applies to documents that have been submitted. Prior to a document being submitted, it is given the status of DRAFT. The order of the items in

this list does not affect the order of the document statuses in the workflow, that is determined in the workflow itself. The ordering available in this list is for display purposes only.

To create a status, click **Add** and type the status name in the provided box. After you have created more than one status, you can move each status up or down in the list by selecting the status check box and clicking either the **Move Up** or **Move Down** buttons. Click **Save** when finished.

Chapter 8

Resource Management

Resource management enables you to manage xPublish resources. If you do not see this menu, or any of the submenus, in the xAdmin interface, you do not have permission to access them. See your xPression administrator for access. The Resource Management section contains the following items:

- Quick Picks, page 115
- Channels, page 116
- Document Property Sets, page 117
- Variable Definition Sets, page 118
- Output Variables, page 119
- System Environment Variables, page 122
- Image Management, page 123
- The Font Utility, page 128
- ECM Configuration, page 131
- ECM Server, page 135
- User Exit Management, page 135
- xEditor Configuration, page 138
- xEditor Event Notification, page 142

Quick Picks

Quick Pick are xPresso attributes that help determine which version of a content instance should be included for each customer record. Quick picks are shared attributes created on the server that can be optionally associated with content in your template. Quick pick attributes provide automatic business logic so that you do not have to write criteria to determine content inclusion.

To create Quick Picks, click **Quick Picks** from the Resource Management menu, then click **Add**. Define the following settings:

- **Name** — Supply a name for the Quick Pick. Names should be 255 alphanumeric characters or less.
- **Import Valid Value** — Supply an XML document to provide valid values for the Quick Pick. See Quick Pick XML Example, page 116 for the schema of the Quick Pick XML file.
- **Valid Values** — This list shows any valid values currently added to the Quick Pick. You can click the **Add** button in this section to manually type a Valid Value for the Quick Pick.

Quick Pick XML Example

When using an XML formatted file to add valid values to a Quick Pick, use the following example as a guide to formatting your XML file.

```
<?xml version="1.0" encoding="utf-8" ?>
- <Values>
  <Value>value1</Value>
  <Value>value2</Value>
  </Values>
```

Channels

Multichannel functionality allows a single document template to be published through different output channels. xPression channels can create paginated, HTML, or plain text output. Channels work with xPresso for Word and xPresso for Dreamweaver only. When creating content in these applications, you can associate regions of text with a specific channel. When publishing through a channel, xPression will select the content the specified channel.

For example, consider a customer letter that could be published and distributed as an E-mail or a printed letter based on your customer's preferences. The letter might contain some content that you wouldn't want to include in an email, such as a letterhead, return address, or postal barcodes. Also, the E-mail version of the letter could contain content you would not want in the printed letter, such as links to your website or return E-mail addresses. Using channels, you could associate the letter-specific content with a channel for paginated letters and associate the E-mail-specific content with an HTML formatted channel. When publishing content through an Output Stream defined with the HTML channel, xPression will select the text associated with the HTML channel and skip the text associated with the paginated channel.

You create your channels in xAdmin, reference them in your Output Stream, and associate them with text in xPresso for Word or xPresso for Dreamweaver. See the *xPresso for Word User Guide* or the *xPresso for Dreamweaver User Guide* for more information about using channels.

To create your channel, click Channels from the Resource Management menu. The list displays all channels that currently reside on the server. Click **Add** to create a new channel. Channels contain the following settings:

- **Name** — Supply a name for the channel. Names should be 255 alphanumeric characters or less.
- **Type** — Select either Paginated, HTML or Text. Paginated channels are for printed content, HTML channels are primarily for E-mail, and Text channels are for SMS messages.

Document Property Sets

Document properties are a way to get variable information from an xPresso document into xAdmin for use as output variables. Document properties are associated with variable definitions in an xPresso document. In xAdmin, you can create an output variable with the same name and use it various places to include variable information from the document.

Document property sets are groups of document properties that can be shared between xPresso for Adobe InDesign, xPresso for Word 2007, and xPresso for Dreamweaver documents. The sets can be exported from xPresso documents and stored on the server, and then imported into other xPresso documents. This enables common document properties to be reused over and over again without recreating them from scratch. Once a document property set is imported into a document, you can easily map the property to an existing variable definition in the document.

The Document Property Sets area enables you to view document property sets exported from xPresso design clients and stored on the xPression Server. The information about the document property sets is read-only and can not be modified in xAdmin. You can delete document property sets from xAdmin, but sets can only be added to the server through the xPresso client.

Document Property Sets: List Options

You can access the Document Property Sets options by clicking the **Resource Management** menu, and clicking **Document Property Sets**. This list will be empty if no document property sets have been exported to the server.

The Document Property Sets: List page contains the following elements.

Element Name	Description
Delete	To remove a document property set, select the set you want to remove and click **Delete**. The document property set is irreversibly removed from the list, and the deleted from the server.
Document Property Set Name List	Click a document property set name from this list to view the properties contained in the set.

Document Property Sets: General Information Options

You can view information about the properties contained in a document property set when you click the set name on the list page. The Document Property Sets: General Information page contains the following elements. All information on this page is read-only.

Element	Description
Name	Displays the name of the document property, as defined in an xPresso design tool.
Type	Displays the type of the document property.

Element	Description
Value	Displays the value type of the document property.
Description	The description of the document property.

Variable Definition Sets

xPresso variable definitions define variable information in an xPresso document. The value of a variable definition can be a data field, or an expression. Variable definition sets are groups of xPresso variable definitions that can be shared between xPresso for Adobe InDesign, xPresso for Word 2007, and xPresso for Dreamweaver documents. The sets can be exported from xPresso documents and stored on the server, and then imported into other xPresso documents. This enables common variable definitions to be reused over and over again without recreating them from scratch. If the data doesn't completely match between the originating document and the new document, the variable definitions can easily be remapped after import.

The Variable Definition Sets area enables you to view variable definition sets exported from xPresso design clients and currently stored on the xPression Server. The information about the variable definition sets is read-only and can not be modified in xAdmin. You can delete variable definition sets from xAdmin, but sets can only be added to the server through the xPresso client.

Variable Definition Sets: List Options

You can access the Variable Definition Sets options by clicking the **Resource Management** menu, and clicking **Variable Definition Sets**. This list will be empty if no variable definition sets have been exported to the server.

The Variable Definition Sets: List page contains the following elements.

Element Name	Description
Delete	To remove a variable definition set, select the set you want to remove and click **Delete**. The variable definition set is irreversibly removed from the list, and the deleted from the server.
Variable Definition Set Name List	Click a variable definition set name from this list to view the variables contained in the set.

Variable Definition Sets: General Information Options

You can view information about the variables contained in a variable definition set when you click the set name on the list page. The Variable Definition Sets: General Information page contains the following elements. All information on this page is read-only.

Element	Description
Name	Displays the name of the variable definition, as defined in an xPresso design tool.
Type	Displays the type of the variable definition.
xPath	Displays the xPath in the data for the variable definition.
Description	The description of the variable definition.

Output Variables

Output variables enable you to use data from your customer data source to build your documents. Typical xPression environments use multiple data sources and multiple documents. Output variables are global and can be reused across different products and data sources. They are used in the definition of output streams and distribution profiles.

Output variables are integral to xPression's ability to streamline your document automation processes by reducing duplication and simplifying your administration duties. When you define an output variable in xPression, you are telling xPression that a certain piece of data from your customer file is relevant to your documents. You give this piece of information a name and *map* this name to the relevant fields in any of your data source groups.

You can map this output variable to each of your defined data source groups. This enables you to use the same output variable in all of your products. When processing your document, xPression chooses the data source mapping for the data source associated with your document.

xPresso Output Variables

xPresso output variables are a little different than other output variables. xPresso output variables don't need to be mapped to a data source. Their mapping is extracted from the xPresso package file that contains the document. xPresso output variables names must match a document property name contained in an xPresso document, which is then mapped to your data source through a variable definition in your document.

When defining output variables in xAdmin, ensure they are named exactly as the document property names in the xPresso package file. If you click the document name on the category Document List tab, a list of document properties contained in the document displays. The names are case-sensitive and fully matching.

XML data node names must exactly match schema node names in case and formatting as defined in the xPresso client.

Output Variables: List Options

You can access the Output Variables options by clicking the **Resource Management** menu, and clicking **Output Variables**. This list will be empty if you have not installed the xPression sample data

and have not previously created any output variables. The output variable list contains the output variable name and data type.

The output variables list page contains the following elements.

Element Name	Description
Add	Enables you to create a new output variable. See Output Variable Options, page 120.
Delete	To remove an output variable, select the output variable you want to remove and click **Delete**. The output variable is irreversibly removed from the list.
Output Variable Name List	Click an output variable name from this list to view or edit the output variable settings.

Output Variable Options

You can view the output variable options when creating a new output variable or when editing an existing output variable. The output variable options display the output variable name and type, and enable you to map the variable to all of your data sources separately.

The output variable options page contains the following elements.

Element	Description
Name	Type a name for the output variable. The name can be up to 255 alphanumeric characters in length. The name cannot match names already used by xPression as system functions. The name cannot contain braces ({}). For a list of reserved words, see Reserved Names, page 121. For a list of system functions, see Appendix B, System Function Definitions.
Type	Select the type of data field to map to. Choose either Numeric, String, or Date: **Numeric**: Data of this type is a whole or decimal number. **String**: Data of this type is readable text. **Date**: Data of this type is in the Date format.
Data Source Mapping List	Each of your existing data source groups appear in the data source table. If you have already mapped the output variable for one of your data sources, that mapping appears in hypertext in the right column. Unmapped data sources are identified by the words *click to map* in hypertext in the right column. To map an unmapped data source, click **click to map**. If you map to a Date field that's empty or null, the value will default to *00000000*.

Element	Description
	After clicking click to map, the mapping page appears. To map your data, simply select the table and field where the desired data resides and click **Save**. **Note:** This option is not required for xPresso output variables.

Reserved Names

Do you use the following names for Output Variables. These are names reserved for use by the xPression application:

- JobID
- StreamNumber
- DocumentID
- PackageID
- DocumentName
- PageDocumentName
- CustomerKey
- PackageName
- UniqueNumber
- DocumentItemID
- Document Item ID
- UserName
- User Name
- Batch Parameter
- BatchParam
- Date
- datetime
- Counter

Creating an Output Variable

To create an output variable:

1. Click the **Resource Management** menu, click **Output Variables**, and click **Add**.
2. In the name box, type a name for the output variable. The name must be between 1 and 255 characters in length.

3. In the type list, select the data type for the output variable. You can choose Numeric, String, or Date. If you are creating an xPresso output variable, skip to Step 7.
4. The data source mapping list at the bottom of the page contains a link for each of your data source groups. Output variables can be used globally across all of your data sources and all of your documents. To map your output variable to a data source, click the **Click to Map** link that corresponds to the data source that you want to map.
5. The Mapping page appears. The mapping page enables you to map your output variable to a table.

   You can choose to map your output variable to a table and field in your data source or select None to specifically not map your output variable for that data source. Choose your mapping options and .
6. You can map your output variable to additional data sources at this time.
7. Click **Save**. For more information about these options, see Output Variable Options, page 120.

Caution: You will receive an error if you map an output variable in xPression and later change the data type of the data source field in your schema. For example, if you map an output variable of type Numeric to a table:field of type Numeric in a customer data source based on a schema, then later change the table:field in the schema to String, the mismatch will cause the following error: **`0-15 12:48:13 [Servlet.Engine.Transports:10] 400406 DEBUG - GetRSFieldValueElement : Begin execute 2002-10-15 12:48:14 [Servlet.Engine.Transports:10] 400706 ERROR - 005019-A runtime exception occurred while executing the BDT :`**

System Environment Variables

System Environment Variables (SEVs) allow you to create logical identifiers for information and resources that may change between environments. SEVs are variables whose values can be different on each server environment.

Note: System Environment Variables are supported for use with xPresso for Word documents only. See *xPresso for Word User Guide* for more information.

To better understand the feature, consider a few use cases:

- External Content—You may need to reference an external image stored on your server. When migrating your document from a development environment to a production environment, the path to the image could change. By using a SEV to supply the path to the image, the document references the SEV name, not the path itself. Each server can have an identically named SEV that has a path unique to the server. This enables you to move the document from server-to-server without having to update the image path in the document template.
- "Draft" stamp that appears only on certain servers—You could create a SEV to help place a "Draft" stamp on output published from your development or test server, but remove the stamp for documents published on the production server. To accomplish this, you would create SEVs on each server identifying the server as a DEV, TEST, or PROD server. Then create a content stamp that has an inclusion condition that tests for value of the SEV as follows:

  ```
  If SEV != "PROD"
  ```

If the condition passes, the output would receive the “Draft” stamp.

- Write output files to different directories—You could create a SEV to identify that path where xPression should write output files. This path could be different on each server in your environment. Simply create an identically named SEV on each server identifying the local path on the server. When creating your Distribution Definition, use the SEV to supply the path to location where xPression should write the output files.
- URL Paths—When using xPression to create E-Mail correspondence, you may need a way to supply images to the E-Mail while in your development, test, and production environments. In the DEV or TEST environments the SEV could link to a local URL, such as: http://testserver/images. When moved into production, the image must reside on a publicly accessible server. You could set the PROD value to a public server, such as: http://www.company.com/customerservice/images.

To create a SEV on your server, click **`System Environment Variables`** from the Resource Management menu. The list displays all SEV currently defined on the server. To add a new SEV, click **`Add`**. SEV have the following settings:

- **`Name`**—Supply a name for the SEV. Names should be 255 alphanumeric characters or less.
- **`Value`**—Type the value for the SEV. The value defined here is the value for the current server only. Ensure you create an identically named SEV on your other servers, and ensure the values are valid for each server.

Image Management

While xPublish stores most images needed for your documents in the xPression database, you do have the option of storing some images in a server directory as an "external reference". The xAdmin image management utility works with images stored in the content repository and provides a centralized location for you to add, remove, and modify these images.

The image utility lists all of the images in your content repository, displaying six images at a time. You can move forward and backward in the list using the navigation controls above and below the list. The image utility can store each image in multiple image formats. xPression stores all the image versions under a single Image Family Name.

How xPublish Handles Images

xPublish was designed to dynamically produce your image in the format most compatible with the chosen output format for your documents. For example, a hard copy document printed through an AFP printer should use a different image format than a PDF version of the same document sent to an archive or e-mail system. In this scenario, you could use a JPEG image for the printed document and a GIF image for the PDF or e-mail version.

xPression automatically handles the image format selection by converting your image to the most suitable format for your output type. For this reason, you do not need to place multiple formats of the same image in the content repository. If the content repository does not contain an image compatible

with your output format, xPression will automatically perform the conversion. xPublish supports the following image types.

- JPEG (.jpg, .jpeg)
- Group 4
- GIF (.gif)
- EPS (.eps)
- PDF (.pdf)
- PNG (.png)
- TIFF (.tif) (xPression supports B/W, Gray, RGB Palette, RGB TIFF, and CMYK TIFF)
- Windows Bitmap (.bmp)
- Documentum Image - Image from EMC Documentum Docbase (only supported in xDesign, xPresso for Adobe InDesign, and xPresso for Word 2007)
- Filenet Image - Image from Filenet (only supported in xDesign)

Note: xPression imports EPS images, not PostScript (PS) images. If you attempt to import PS images, xPression will create an exception. If you have PS images you want to use with xPression, please recreate them as EPS.

The following image formats and types are not supported.

Image Type	Description
Animated GIFs	Animated GIFs are not supported. Animated GIFs are comprised of a number of images in the same file. The animation effect occurs when an application, like Internet Explorer, switches between the images. If you import an animated GIF, xPression extracts only the first image in the sequence.
EPS Image with TIFF Proof/Preview	If you import an EPS image that contains a TIFF proof or preview, xPression will only import the TIFF image because the TIFF proof precedes the EPS image in the file. xPression will treat the image as a TIFF and not as an EPS.
Certain Compressed TIFFS	xPression only supports the following compressions: Only Uncompressed, Huffman RLE (CCITT 1D), Group 4, LZW and PackBits compressions.
CMYK TIFFs	Only B/W, Gray, RGB Palette and RGB TIFF images are supported. CMYK TIFFs are a very specialized subdivision of the TIFF standard. They are generally device specific and restricted to color pre-press applications.

For more information about how images are handled and supported, along with recommendations for using and managing images with xPression, see the *xPublish Output Processing Guide*.

CMYK TIFF Support

CMYK TIFF images are supported in PDF and PostScript output. The following TIFF features are supported:

- CMYK Color
- Uncompressed
- LZW compressed
- Interleaved pixel order (CMYKCMYK)
- Per channel pixel order (CCMMYYKK)
- Mac and PC Byte Order

The following TIFF features are not supported:

- RGB color
- Grayscale
- Clipping paths and other transparency
- Zip compression
- JPEG compression
- ICC color profiles

- Layers
- Image pyramid
- Any other features not specifically noted as supported

xPression does not attempt to resample CMYK TIFF images since they are expected to be used only when high resolution and high quality images are required.

Image Management Utility Options

To access the image utility, click **Image Utility** from the xAdmin **Resource Management** menu. The Image Utility enables you to add, update, preview, and delete images.

From the image utility list, you can complete the following actions.

Element	Description
Add	Enables you to add a new image family to the content repository. For more information on adding images, see Importing an Image to the Image Management Utility, page 126.
Update	Enables you to update an existing image family. Select the image family you want to update, and click **Update**. For more information on updating images, see Updating an Image Family, page 127.
Preview	Enables you to preview an image in the content repository. Select an image format and click **Preview**.
Delete	Select one or more image families and click **Delete** to permanently remove them from the content repository.
Image Family Name List	Click the image family name to access the image family options.

Importing an Image to the Image Management Utility

When you import an image into the content repository, you are really setting up an image family for the different versions of the image you might need. To add a new image:

1. From the Image Management Utility page, click **Add**.
2. The Add Image Family page appears. The Image Family page appears. You can specify the family name and specify an optional web format. Supply a name for the image family. The name must be between 1 and 255 alphanumeric characters in length. The name must be unique and is case-sensitive.
3. In the Import Local Image box, supply the path and file name of the image you want to import. You can use the Browse button to select an image from your file system, or type the fully-qualified path and filename for the image.

4. The Web Format box enables you to control which image is used for HTML, e-mail, or PDF documents. For example, you may want to use a JPEG image or a GIF image of a particular resolution. If you do not select an image for Web format, xPression automatically converts your image for web use unless the original image is already in a suitable format. xPression sets the resolution for auto-generated Web images at 100dpi.

   You can use the Browse button to select an image from your file system, or type the fully-qualified path and filename for the image.

5. Click **Save** to upload the selected image to the content repository.

Note: If you are using Microsoft Internet Explorer 8, you will not be allowed to type a path directly into the Import Local Image field; you must use the browse button to locate the file.

Updating an Image Family

From time to time you may need to update an image in your documents. You can use this function to update an image by replacing it with a new version. To update an image family:

1. From the Image Management Utility page, select the image family and click **Update**.
2. To upload a new image, replace the current image with an updated version. In the Upload New Image box type the path to the image in the provided box or select the image with the Browse button
3. To define or update the web format, replace the current image with an updated version. In the Web Format box type the path to the image in the provided box or select the image with the Browse button
4. If your image is already being used in content items, the image utility enables you to update the image for your content items by allowing you to select, or not select, which content items to update with the new image. The content item list appears at the bottom of the page.

   Select which content items you want to update with the new image. Content items not selected will continue to use the old image. If you do not update all of the content items, xPression creates a new image family for the updated content items.

5. Click **Save** when finished.

Note: If you are using Microsoft Internet Explorer 8, you will not be allowed to type a path directly into the Upload New Image field; you must use the browse button to locate the file.

The Font Utility

On the xPression Server, fonts are stored in three locations:

- The xPression database - All xPublish fonts are stored here as a reference. These fonts are your master set and are not used in production.
- The xPublish machine - xPression uploads a copy of your fonts to a semi-permanent disk cache located on the machine that processes your documents. Fonts are uploaded when they are first used and persist until deleted or updated. These fonts are used for production.
- The client machine - Fonts are stored on the client machine for editing and viewing.

Each time xPression publishes a document, the fonts on the xPublish computer are checked against the fonts located in the xPression database. If the needed fonts do not reside on the xPublish computer, xPression uploads the fonts from the xPression database. xPression also updates the fonts if the xPression database contains a newer version of the fonts. The fonts remain on the xPublish server indefinitely until updated by xPression or specifically removed by the user. The fonts are reused for subsequent jobs.

The semi-permanent disk cache resides in your xPression installation directory. This path is defined in xPressionPublish.properties located in the xPression installation directory. With the exception of AFP, xPression automatically converts all other formats required for publishing.

How xPublish Supports Fonts

The xPublish composition engine supports TrueType (TTF) and OpenType fonts (OTF) with full Unicode support. In addition to TTF and OTF, xPublish supports Type 1 fonts for PostScript and PDF. xPublish supports OpenType fonts for AFP, PDF, and PostScript. xPublish also supports TTF fonts and Type 1 fonts in an Open Type wrapper.

Because xPublish was designed to support the same fonts used in Microsoft Word, you can publish documents in any supported format using any font available to Microsoft Word. Additionally, xPublish provides out-of-the-box support for Unicode fonts and double-byte fonts, such as those used in Chinese, Turkish, and Japanese characters.

xPublish also supports the AFP fonts that meet the following characteristics.

- Must be an AFP Outline font
- Must have been created from TrueType font masters stored in the content repository
- Supports only single byte AFP fonts
- Fonts must use the Latin alphabet

For complete information about fonts support in xPression, including procedures for AFP font conversion, embedding TTF fonts in PCL output and more, see the *xPublish Output Processing Guide*.

User-Created Fonts

If your user-created fonts have license restrictions, you can set the OnFontNotSupported parameter in the xPressionPublish.properties file. For more information, see *Administering the xPression Server*.

The Font Management Utility Options

The xAdmin Font Management Utility enables you to manually upload, update, and delete fonts from the xPression database. This utility manages fonts for the xPublish composition engine. You access the font utility by clicking **Font Utility** from the Resource Management menu.

The font utility displays a list of all the fonts currently loaded in your content repository. The list displays six fonts at a time. To see the remainder of the list, use the navigation controls to move forward or backward in the list. The Font Management Utility contains the following information for each font:

- **Name.** Displays the file name of the font without the path or extension information.
- **Family Name.** The font family name from the TTF font name records. This is the base family name for the font. For example, Arial, Times, Helvetica.
- **SubFamily Name.** The sub-family name, for example Regular, Bold, Italic, Bold Italic.
- **Full Name.** The full font name from the TTF file for the font.
- **PostScript Name.** The PostScript name from the TTF file for the font.

From this list, you can complete the following actions.

Action	Definition
Add	Enables you to add a new font to your content repository. See Importing a Font Through the Font Management Utility, page 129 below.
Add AFP	Enables you to define the character set file and codepage for an AFP font version. Simply select the desired font and click **Add AFP**. For more information, see the *xPublish Output Processing User Guide*.
Delete	Deletes an existing font. Select the desired font and click **Delete**.

Importing a Font Through the Font Management Utility

To add a new font to the xPression database through the Font Management Utility:

1. From the Font Management Utility, click **Add**.
2. xPression displays the Add a New Font page. Type the path to your font file or click **Browse** to navigate to the file.
3. Click **Save** to add the font to the content repository.

Note: (1) Due to limitations set by the Windows operating system, you cannot use the Browse function to add fonts from the Windows font directory. To add a font from the Windows font directory, you must manually type the path and font file name. You can use the Browse function to add fonts from any other directory. (2) Due to a limitation with Internet Explorer 8, you can not type in a path, or modify a path in the Import Font File field; you must use the browse button to specify the path.

User Defined Characters

Occasionally you may need to print a character whose glyph is not available from your existing font files. For example, you may need to place a signature on welcome letter or a company symbol in a policy document.

The best strategy for getting your special characters into your documents is to use a third party font creation tool to place these special characters within a True Type font. Once your special characters are added to a font, you can make the special characters available to your documents by adding the font to your xPression content repository.

Third party tools like FontLab (www.fontlab.com) enable you to create characters from images or to design an entirely new character. You can add these characters or images to existing font files or create new font files for them. Another strategy is to acquire your characters from a professional font creator.

How Fonts Store Special Characters

All characters in a font are referenced by a character code. xPression and TrueType/OpenType fonts use Unicode encoding for assigning codes to characters. Unicode provides a range of character codes that you can use when creating your own characters. This range is called the Private User Area (PUA) and consists of character codes E000 through F8FF. When placing a special character into an existing font, place the font in the PUA.

If you are creating a new font, you can assign your character any available code. However, it is easiest to assign your characters codes from low character ranges. Codes from low character ranges are associated with the letters on a standard keyboard (for example, "a" "b" "c" and "d").

Adding Your Characters to a Font

As mentioned above, there are two main strategies for adding special characters to fonts: creating a new font to hold your special characters, or adding the special characters to an existing font in your system. Both methods require you to use a third party font creation tool.

For adding your characters to a new font:

- You must create your characters in a dedicated TrueType/OpenType font.
- Assign your characters a character code from a low range area where the codes are associated with the keys on your keyboard.

For adding your characters to an existing font:

- Ensure you are adding your font to a TrueType/OpenType font.
- Assign your characters to a character code in the PUA.

Caution: Windows 2000 and Windows XP provide a tool (Eudcedit.exe) to associate special characters with all fonts installed on a Windows system. This tool is completely Windows specific, and therefore unusable in a platform independent environment like xPression.

ECM Configuration

ECM Configuration works in conjunction with ECM Server, page 135 to enable xPression to integrate with your ECM system. xPression supports two ECM systems, Documentum and Filenet. Both systems require special installation steps. Please see the *xPression Installation Guide* for information about installing Documentum and Filenet.

To access ECM Configuration, click **ECM Configuration** from the **Resource Management** menu. The ECM Configuration List page appears. The ECM Configuration List page contains the following elements.

Element Name	Description
Add	Enables you to add a new ECM Configuration. You can add Documentum and Filenet configurations. For instructions, see ECM Configuration: Documentum Options, page 131, ECM Configuration: Filenet Version 3 Options, page 133, or ECM Configuration: Filenet Version 4 Options, page 134.
Remove	Deletes an existing ECM Configuration. Select the desired ECM Configuration and click **Delete**.
ECM Configuration List	Click the ECM Configuration name to edit the settings.

ECM Configuration: Documentum Options

You can define multiple Documentum configurations, each pointing to a different Docbase. To specify the options for your Documentum configuration, click **Add** from the ECM Configuration: List page. The Documentum configuration options appear. This page contains the following elements.

Element Name	Description
Config Name	Supply a unique descriptive name for the Documentum configuration. This name will be used to identify the configuration when you retrieve content from your ECM system.

Element Name	Description
User Name	In the User Name box, supply the xPression system user name. This user name must be a valid Documentum Docbase user name with privileges to browse the Docbase object types. It enables the xPression system to log on to a Docbase when it needs to store a document in the Documentum archive system. This user name will be used to access this repository every time it is selected through an xPresso client. This user name is different from the user name that enables xDesign to access Documentum images. For more information about the differences between the two sets of user names, see the *xPression Installation Guide*.
User Password/Re-type User Password	In the User Password \ Re-type Password boxes, supply the xPression system password. This password must be for a valid Documentum Docbase user name with privileges to browse the Docbase object types. It enables the xPression system to log on to a Docbase when it needs to store a document in the Documentum archive system. This password will be used to access this repository every time it is selected through an xPresso client. This password is different from the password that enables xDesign to access Documentum images. For more information about the differences between the two sets of passwords, see the *xPression Installation Guide*.
Default Connecting Path	The Default Connecting Path option enables you to specify an existing folder in the repository that will be opened by default when your users browse the repository through this ECM Configuration. Users will be able to browse all folders beneath the folder defined in this option.
ECM Type	Select **Documentum**.
Store Name	In the Store Name box, supply the name of the Docbase that you want to connect to. This must be the actual Docbase name in the Documentum system. You cannot change the name after saving your Docbase configuration. If you provided the wrong Docbase name and saved your configuration, you must delete the Docbase configuration and create a new configuration using the new name.
Archive Path	In the Archive Path box, supply a path to an existing path in the Documentum Docbase. By default, xPression distribution definitions will use this path to store archive output. For example: /xPression/ArchiveOutput

Note: Files saved into Documentum or retrieved from Documentum using WebDAV can't have names that contain non-English characters.

Editing a Documentum Configuration

You cannot edit the name of a Docbase configuration once the configuration has been saved, but you can change the log in information, the Default Connecting Path and the Default archive path. To change the user name and password, click **Change Login Account** and supply the new login information.

ECM Configuration: Filenet Version 3 Options

To specify the options for your Filenet version 3 configuration, click **Add** from the ECM Configuration: List page. You should set up your ECM Server, page 135 before setting up the ECM Configuration. The Filenet configuration options appear. This page contains the following elements.

Element Name	Description
Config Name	Provide a unique name for your Filenet configuration. This name will be used to identify the configuration when you retrieve content from your ECM system.
User Name	In the User Name box, supply the username of an authorized Filenet user. This user name will be used to access this repository every time it is selected through an xPresso client.
User Password/Re-type User Password	In the User Password and Re-type User Password boxes, supply the password of the authorized Filenet user you defined above. This password will be used to access this repository every time it is selected through an xPresso client.
Default Connecting Path	In the Default Connecting Path box, supply the path to the Filenet content server. Use the following syntax: http://<*servername*>:<*portnumber*>/ContentEngine/<*objectstore_name*>// where <objectstore_name> is the Object Store name in your ECM system. For example: http://Filenet:8080/ContentEngine/ObjectStore/
ECM Type	Select **Filenet** version 3.
ECM Server	Select your ECM Server from the list. The server names in this list are added when you create the server configurations in ECM Server, page 135. To create a new server, click **new server.**
Store Name	Store Name is the name of 'objectstore_name' in the Default Connecting Path. It is the Object Store name in Filenet. The Store Name is generated automatically when you have provided a Default Connecting Path in a valid format. You will not be able to save the configuration if the Default Connecting Path is incorrect.

ECM Configuration: Filenet Version 4 Options

To specify the options for your Filenet version 4 configuration, click **Add** from the ECM Configuration: List page. You should set up your ECM Server, page 135 before setting up the ECM Configuration. The Filenet configuration options appear.

This page contains the following elements.

Element Name	Description
Config Name	Provide a unique name for your Filenet configuration. This name will be used to identify the configuration when you retrieve content from your ECM system.
User Name	In the User Name box, supply the username of an authorized Filenet user. This user name will be used to access this repository every time it is selected through an xPresso client.
User Password/Re-type User Password	In the User Password and Re-type User Password boxes, supply the password of the authorized Filenet user you defined above. This password will be used to access this repository every time it is selected through an xPresso client.
Default Connecting Path	In the Default Connecting Path box, supply the path to the Filenet content server. Use the following syntax: http://<*servername*>:<*portnumber*>/Workplace/webdav/<*objectstore_name*>// where <servername> is the name of the server that hosts Filenet. <portnumber> is the port number for the server that hosts Filenet. <objectstore_name> is the Object Store name in your ECM system. For example: http://Filenet:8080/Workplace/webdav//ObjectStore/
ECM Type	Select **Filenet** version 3.
ECM Server	Select your ECM Server from the list. The server names in this list are added when you create the server configurations in ECM Server, page 135. To create a new server, click **new server.**
Store Name	Store Name is the name of 'objectstore_name' in the Default Connecting Path. It is the Object Store name in Filenet. The Store Name is generated automatically when you have provided a Default Connecting Path in a valid format. You will not be able to save the configuration if the Default Connecting Path is incorrect.

ECM Server

ECM Server works in conjunction with ECM Configuration, page 131 to enable xPression to integrate with your Filenet ECM system. To access ECM Server, click **ECM Server** from the **Resource Management** menu. The ECM Server List page appears.

This page contains the following elements.

Element Name	Description
Add	Enables you to add a new ECM Server.
Remove	Deletes an existing ECM Server. Select the desired ECM Server and click **Delete**.
ECM Configuration List	Click the ECM Server name to edit the settings.

ECM Server: Options

To specify the options for your ECM Server configuration, click **Add** from the ECM Server: List page. You should set up your ECM Server before setting up the ECM Configuration, page 131. The ECM Server configuration options appear.

This page contains the following elements.

Element Name	Description
Server Name	Provide a descriptive name for the Filenet server.
Server Domain	Supply the server name or IP address of the Filenet server. For example: 10.5.5.28
Webservices Port	Supply the webservices port number.

User Exit Management

A User Exit is a user-created external program that can be used to supply data to variable rules. Variable rules define variables that are used in your document whenever the criteria in the rule is met. The data for the variable rule can come from your data source or from a user exit. You can perform any action with your user exit as long as it returns a string value to xPression. Your user exits can perform calculations or even retrieve data from another source.

Note: The XML User Exit is completely separate from the user exits discussed in this section. XML User Exits do not have to be registered through xAdmin.

About User Exits

User exits allow you to establish the value of a variable with an external program. User exits are integrated with your document in xDesign in a variable rule. A standard user exit must be created within paramaters specified in the xAdmin User Guide. Values provided by a standard user exit must be in the form of a string. A standard user exit allows maximum flexibility in determining the value of a variable. Standard user exits are registered in xAdmin.

XML user exits allow you to transfer data from virtually any data source to xPression in XML format. XML user exits are created and implemented within the limitations discussed in the *xAdmin Integration Guide*. Determining whether to use a standard user exit or an XML user exit depends on your specific requirements.

User Exit Requirements

The User Exit is a Java public class with public methods defined within. All input parameters should be of the String type. All methods that will be called by xPression must be prefixed with the following string "UE_". For example, UE_ReturnDate. The following list identifies the xPression requirements for your custom User Exit.

- Must be a public Java class
- All methods must be public
- All input parameters must be String type
- All methods that are directly called by xPression must be prefixed with UE_
- The User Exit must return a String value
- Your User Exit must be registered with the xPression system through xAdmin. See Registering User Exits with xPression, page 137.
- Methods **cannot** be defined as "static".
- You must place your user exit class in the xPressionHome /plugins folder. xPression will load the file at runtime.

Implementing a User Exit

The procedure for implementing a User Exit consists of the following steps:

1. Place the jar file in the location outlined in the xPressionHome /plugins folder.
2. Start or restart the server.
3. Register the user exit

If xDesign is running during this process, you will need to close the application and then restart it in order to have the user exit functions recognized by xDesign.

User Exit Management: List Options

The User Exit Management section enables you to register your user exit name with the xPression system. This page lists all existing user exits currently registered with xPression. To access the User Exit Management list, click the **Resource Management** menu and then click **User Exit Management**. This page lists all existing user exits currently registered with xPression. From this page you can add new user exits, copy existing user exits, or delete user exits.

This page contains the following elements.

Element Name	Description
Add	Enables you to register a user exit with xPression. For instructions, see Registering User Exits with xPression, page 137.
Copy	To create a duplicate user exit, select the user exit you want to copy and click **Copy**. The duplicate user exit appears in the list with the words "Copy of" placed before the original name.
Delete	To delete an existing user exit , select the user exit you want to remove and click **Delete**.
User Exit Name List	To edit the settings of an existing user exit, click the user exit name.

Registering User Exits with xPression

All User Exits must be registered with xPression. To register your User Exit:

1. From the User Exit Management page, click **Add**. The User Exit General Information page appears. The General Information page appears.
2. In the Name box, supply a name for the user exit. This is the name that will identify the User Exit when you are setting up your variable rule or external content group. You must use the full package name.
3. In the Class Name box, supply the class name for the User Exit.
4. Click **Save**.

Note: If you update your methods or classes after registering your User Exit with xPression, you will have to restart the server before the updated methods become available.

Troubleshooting User Exits

If you have problems with your User Exit, check the following items.

- Enter the full package name in the "Class Name" field of User Exit Management (In xAdmin **Resource Management** select **User Exit Managemen**t).
  - To find out what the class name should be, right-click on the jar file and choose to "Open with WinZip".
  - Look at the path column. Enter it in as you see it into the Class Name field in xAdmin, replacing the "/" with ".", and ending it with the name of the User Exit class name.
  - Save the User Exit and it should now be recognized.
- Try restarting the server. If you just added a new user exit, the server will need to be restarted before it will be recognized.
- Make sure you place the User Exit jar file in the xPressionHome /plugins folder. .
- Restart xDesign completely. In order for xDesign to recognize a new user exit, it needs to be completely restarted.
- If you have imported a User Exit along with a PDP, and are using an earlier build than B40 for xPression 2.5, you will need to remap the User Exit after the import.
- If the User Exit does not function and the error message “The class version of com.dsc.customeruserexit.StringFunctionsExit is unsupported” appears in the log, it is probable that the User Exit was compiled with a version of Java newer than that on the server.

  To ensure that the User Exit uses the same Java version as the server, decompile the class file from the User Exit JAR file and compile it with the correct javac.exe JDK version, or recompile the original Java file with the proper javac.exe.

  To determine the correct version, run java -version on the server.

  Once updated, restart the server.

xEditor Configuration

This page enables you to set up configurations for your xEditor implementations. The first two items in the list are the default xResponse and xRevise configurations. You can new configurations for any custom application you develop with the IDDK web services. Click **New** to create a new configuration.

Managing the Local Cache

xEditor creates a local copy of any documents that the user opens for editing. To improve load performance these file can be maintained in a cache. However, since these document may contain sensitive information, the cache can be configured so that the local file is deleted when the session closes to limit the opportunity to access this information.

Even if security concerns are minimal the files can accumulate over time and should be deleted periodically. The xPression administrator sets the parameters for how the cache is utilized on the Cache tab of the xEditor configuration page.

xEditor Configuration Options

From the xEditor Configuration page, click New to create a new configuration or click the name of an existing configuration. Each configuration contains four tabs: General, Word, Revision Unit, and Cache.

The General tab establishes general parameters for the configuration, such as the name and actions specific to xEditor. It contains the following options:

- Name — Supply a name for the configuration. The default xResponse and xRevise configuration names cannot be edited.
- Description — Supply a description for the configuration. The default xResponse and xRevise configuration descriptions cannot be edited.
- Application Name — Supply the name of the application that will use xEditor. The default xResponse and xRevise application names cannot be edited.
- Always open in read-only mode (save disabled) — This option is provided for IDDK users so that xEditor can be used as a view-only device. Save As is still available, so edited documents can be saved to the file system, but cannot be saved as an xPression document. This can be used with Completed work items.
- Allow saving work item as a Word document — Enables the Save As feature which enables you to save the document to your file system.
- Allow user to preview work item as PDF — When selected the xEditor user can generate a preview of the work item in PDF format.
- Enable debug mode — This option enables the Debug button in xEditor. Debug should be used at the request of EMC Document Sciences representatives only.
- Enable hidden text monitoring — Hidden Text Monitoring is not enabled by default. When enabled hidden text can be displayed by clicking the Show/Hide button in the Microsoft Word toolbar or ribbon. Modifying hidden text is not recommended for xPublish documents. Modifying hidden text in CompuSet documents should be performed by qualified personnel only.
- Allow users to un-hide the selection — When selected the Unhide button on the Hidden Text Panel is available. This option applies to CompuSet documents only. Normally, any text added to an area of hidden text will be hidden text, but if the Unhide button is clicked any text added following the point where the Unhide button was clicked will be normal text.

The Word tab establishes how certain Microsoft Word features and functions are employed. It contains the following options:

- Track Changes — Enables you to control whether or not revisions are displayed. When this option is selected, the track changes “view” is set to “Final Showing Markup”. When not selected, documents are opened in “Final” view.
- Word Configuration Options — This allows you to select an XML file that controls menus, ribbon bars and other options available to users in Microsoft Word. Options will be merged into the current xEditor configuration.
- Enable Autocomplete in Word 2003 — Turns the Microsoft Word 2003 Autocomplete feature on.
- Show vertical ruler — Displays the vertical ruler

- Show horizontal ruler — Displays the horizontal ruler
- Spell check form fields before save — Does spell check on form fields before each save. See the xEditor documentation for more information.

The Revision Units tab establishes parameters related to how revision units are managed. It contains the following options:

- Show TOC Tree — Determines whether the Table of Contents and associated features, such as Carry Forward, are available.
- Allow Delete of revision units — Enabled by default.
- Allow un-delete of revision units — Enabled by default.
- Show Deleted RUs in the TOC — Enabled by default. When not selected the Show/Hide Deleted Revision Units button will not be available, so it will not be possible to display any deleted RUs. If the configuration is changed to show the Show/Hide Deleted Revision Units button, deleted RUs can again be displayed in the TOC. RUs cannot be permanently deleted.
- Allow revision units to be moved — Enabled by default.
- Allow creation of new revision units
- Allow revert to saved for revision units
- Show external revision units in the TOC tree — Shows revision units for external content in the TOC tree.
- Show pages of external content — Shows a subnode for each page in a multi-page external content revision unit in the TOC tree.
- Enable search features — Enables the xEditor search feature.
- Allow insertion of a new RU — Enables you to insert the RU that you find into the current document.
- Allow inserting content to cursor within existing revision units — Enables you to insert the content that you find within an existing revision unit.
- Allow compare of the work item to a Word document — Enables the Compare to File option on the context menu for the document node in the xEditor TOC.
- Allow compare of the work item to a Completed Work item — Enables the Compare to Completed Item option on the context menu for the document node in the xEditor TOC. This option permits comparing the document to a completed work item using Microsoft Word's Compare feature.
- Variable Editing — Controls how xEditor handles variables.
  - Auto-detect protected variables — Allows editing variables that are not otherwise protected. This setting is recommended for most cases where document protection is to be used. When this setting is selected and the document contains a variable with instances in both protected and unprotected regions, the variable is considered protected throughout and cannot be edited.
- All variables are editable — Enables you to edit variables in protected sections. Edited variable becomes static text.
- No variables are editable — Cannot edit any variables.

The Cache tab provides options for managing the local cache. The cache improves load performance, but when files are left in the local cache, they may be accessed directly from the local file system. This may be a security concern, so it is not always desirable. It contains the following options:

- Enable cache dialog in xEditor — When selected the Local Work Items Cache Settings dialog box is available to xEditor users. When available the dialog box displays the cache settings and enables the xEditor user to clear the cache.
- Enable local work item cache — When selected local caching of documents is enabled and the settings that determine when the cache should be cleared. When not selected the local cache is cleared when the document is closed.
- Clear when size exceeds — Select the maximum size that the cache can achieve before it is cleared. This option is available when **Enable local work item cache** is selected.
- Clear items older than — Select the maximum age at which a cached file will be deleted. This option is available when **Enable local work item cache** is selected.

The Variables tab provides options for presenting and working with variables in xEditor.

- **Show Variables In Color** — Shows variables in the selected color. If this option is not selected, variables are displayed in the standard text color. When a document contains many variables, select this option might affect the loading performance. Changing this setting only affect new work items that are not previously loaded. For a loaded work item, this setting will be overridden by the toggle state of the **Turn on or off variable coloring** button.
- **Variable Color** — Selects the text color for variables, other than variables in form fields. Variables in form fields are displayed in the standard text color.
- **Show NULL variables in Word** — Makes NULL variables visible while editing. By default NULL variables are not displayed in the document, but they exist and may be displayed in the variable name format as a placeholder in the document. NULL variables are not included in output even if they are displayed in the editor. Refer to the *xRevise User Guide* for more information on how xRevise users can use NULL variables.
- Variable Editing

  Auto-detect protected variables — Allows editing variables that are not otherwise protected. This setting is recommended for most cases where document protection is to be used. When this setting is selected and the document contains a variable with instances in both protected and unprotected regions, the variable is considered protected throughout and cannot be edited.

  All variables are editable — Enables you to edit variables in protected sections. Edited variable becomes static text.

  No variables are editable — Prevents editing any variables.
- Allow Primary Keys to be edited

  Primary key variables are protected by default. Select this option to make them editable.

The Carry Forward tab provides options related to Carry Forward.

- Allow carry forward during edit session — Enables the Carry Forward option on the context menu for the document node in the xEditor TOC.
- Auto complete Carry Forward (do not review carry forward changes) — Skips the Carry Forward review process. When selected, revision units are selected based on the carry forward

decision matrix, established in the Default_Config.xml File or the designated file selected under **Configuration Options**.

- Configuration Options — Enables you to choose a configuration file that establishes the carry forward decision matrix. Refer to the *xRevise User Guide* for principles, requirements, and guidelines for modifying or creating a custom configuration file.

xEditor Event Notification

xEditor event notification provides a means of informing applications that use xEditor that Open, Save and Close actions have occurred with xEditor. xRevise, xResponse, and custom applications created with IDDK can use the event notification feature as long as a listener has been created and the listener has been identified for the application in xAdmin. The application user must have read/write access to C:\Documents and Settings\%CURRENT_USER%\Application Data\EMC Document Sciences.

This feature is optional. A listener must be created before an application can use it. Events are posted from the server, so a server connection is required.

Listeners

Events are posted to the registered event listener URL using a Representational State Transfer. or REST, architecture. Therefore, the user must provide a listener that accepts a content type of 'application/json' and is compatible with the xPression event URI structure. Please refer to the appropriate third-party documentation for details on REST.

The xPression event RESTful URI structure is:

`<EventListenerURL>/xPression/Events/<xPressionApplication>/<ResourceType>`
<EventListenerURL> is the URL registered in xAdmin, <xPressionApplication> is the xPression application posting the event, and <ResourceType> is the application resource type involving the event. Supported applications are:

- xRevise
- xResponse
- iddk/<CustomAppName>

The only supported<ResourceType> is 'workitem'.

The action for the event is an HTTP POST method. For example:

```
URL: <EventListenerURL>/xPression/Events/xRevise/workItem
Method: POST
Request Format: application/json
Payload (JSON):
{
 event: 'xEditor Open'
 user: 'xpression'
 timestamp: '20110115000045'
 read-only: 'false'
}
Response: No Response
```

xEditor Event Notification Configuration

Event Notification for all applications is managed on the Event Notification Management screen of Resource Management. Items on the page are arranged in three columns:

- Event Listener URL

  The URL of the event listener. All event listeners that have been registered are listed in this column. EMC Document Sciences provides one standard listener for xResponse that cannot be deleted. Any other listeners must be created as described in Listeners, page 142. Custom listeners can be deleted from the list if desired. The names are hyperlinks; clicking the link opens the Edit dialog box.

- Application

  The name of the application associated with the events. More than one application can be associated with one listener, but an application can be associated with only one listener.

- Subscribed Events

  The events that will be posted to the listener URL for the indicated application. There are three events: Open, Save, and Close. Selecting an event and clicking **Delete** unsubscribes the event without opening the Edit dialog box.

The Event Notification Management page includes three buttons on the Actions bar:

- Add Event Listener

  Opens the Add Event Listener dialog box to add a new event listener URL to the list. A listener must first be created as described in Listeners, page 142.

- Edit Event Listener

  Opens the Edit Event Listener dialog box for the selected event listener URL. Select an event listener by clicking the check box next to it.

- Deletes the selected item, either a listener URL or an event subscription. Only the listener's entry in xAdmin is deleted; the listener itself is not deleted.

Adding and Editing Listeners

Listeners are added and edited with the same interface. The only difference is that the information is pre-populated when editing, and the listener URL cannot be edited.

To add or edit a listener:

1. Log on to xAdmin and open the Resource Management page.
2. Select **xEditor Event Management**.
3. To add a new listener, click the **Add Event Listener** button. Or, to edit an existing listener, select the listener and then click **Edit Event Listener**.

   The Add/Edit Event interface opens. The page consists of two tabs: General and Events.
4. If creating a new listener, type the URL for the listener in **Listener URL**. The listener URL is limited to 256 characters.
5. The Actions bar in the Applications section of the General tab provides two buttons: Add Application and Delete Application. When creating a new listener, or adding another application for the listener, click **Add Application**.
6. Select the application from the list. IDDK applications must be identified exactly as the name appears in xEditor Configuration. IDDK names are limited to 256 characters.

   Applications can be removed from the listener by selecting the application and clicking the **Delete Application** button.

   The Events tab becomes available when an application is added to the listener.
7. Open the **Events** tab. The listener URL is displayed read-only for reference.
8. Choose the application for which the events are to be subscribed from the list.
9. The Actions bar in the Subscribed Events section provides two buttons: Add Event and Delete Event. Click the **Add Event** button and select an event from the list. The following events are supported:
   - Open
   - Save
   - Close

   The listener can support any or all events for each application associated with the listener. Repeat as required for all desired events and applications.

   Events can be deleted by selecting them and clicking the **Delete Event** button. Events can also be deleted from the xEditor Event Notification main screen by selecting the event and clicking the **Delete** button.
10. Click **Save** to save the listener configuration.

EventList.xml

The EventList.xml file, located in xPressionHome, defines the applications that will post events and which events are available for subscription.

Caution: Do not modify EventList.xml. This topic is provided for reference. The file is maintained by xAdmin automatically.

Chapter 9

xPublish Output Management

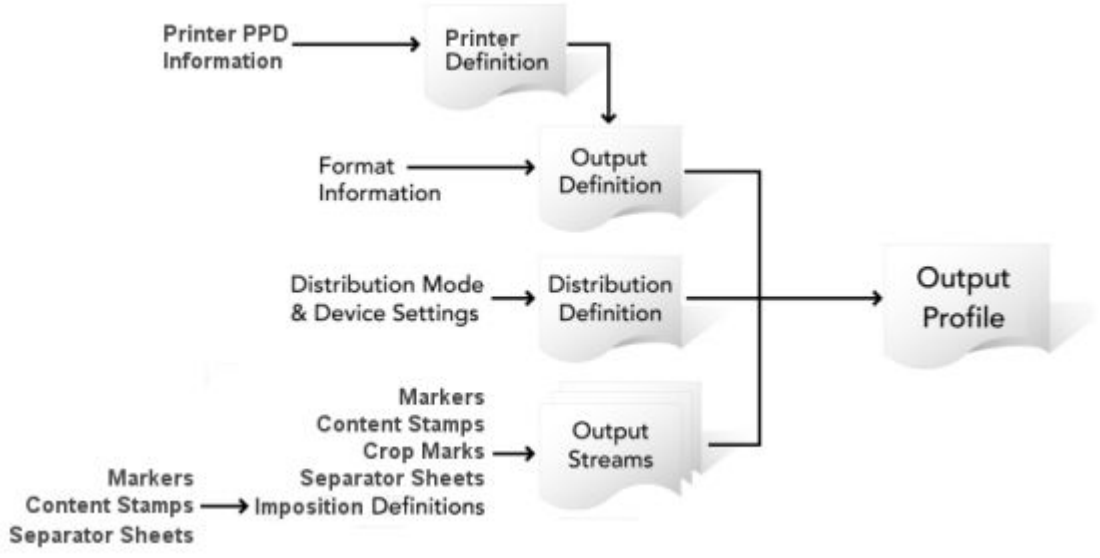
The xPublish Output Management section of xAdmin enables you to control the publishing side of xPublish. The settings and definitions you define in this section apply only to xPublish enabled documents.

If you do not see this menu, or any of the submenus, in the xAdmin interface, you do not have permission to access them. See your xPression administrator for access.

About xPublish Output Management

xPublish was designed with a "define it once, apply it many times" philosophy. The settings you apply in output management are grouped together in an output profile.

The output scenario for any given xPression document must take into account the document format, the document recipients, the needed output processing features, and the document distribution mode. xPression stores each of these settings separately, enabling you to mix-and-match and reuse these settings to create customized output scenarios based on your specific output needs.



It is likely that you will have more than one set of device, output, marker, imposition, and distribution definitions. You can mix-and-match and reuse these definitions to create customized output scenarios based on your specific output needs.

The output profile is the centerpiece of the xPression output management system. It is appropriately named as it functions as a profile of a specific output solution. Specifically, it is a container for all the settings you define in xPression output management for a specific output solution.

Output profiles provide your job definitions with all needed output management information. The job definitions combine this information with data about your documents and customer data sources.

The xPublish output management menu contains the following sections. To see more information about each of these options, click the provided link:

- Printer Definitions, page 148
- Marker Definitions, page 153
- Content Stamp Definitions, page 161
- Separator Sheet Definitions, page 183
- Imposition Definitions, page 188
- Postal Processing Definitions, page 194
- Output Definitions, page 198
- Stream Definitions, page 233
- Distribution Definitions, page 244
- Output Profiles, page 264
- Output Management Scenario, page 266

Note: Make sure that your xDesign document designers know when you have made changes to an output profile. If they do not Generate XML or update their Document Version, the changes will not be reflected in the document stored in the xPression database.

Printer Definitions

Printer definitions enable you to configure your output devices by specifying settings for your printer and identifying printer resident images.

Printer definitions work side-by-side with Marker Definitions, page 153 to provide a mechanism for implementing device features for output streams and documents. This enables you to select media (tray pulls), operate finishing options (stapling, jogging, etc) and control other device specific features such as device resolution, screens, watermarks and more.

Printer definitions use your print device PostScript Printer Description (PPD) file to identify all of the features and settings supported by the device. Markers identify places in the document where you would like to implement a feature or set of features.

PPD files are created by vendors to describe the entire set of features and capabilities available for their PostScript printers. A PPD also contains the PostScript code (commands) used to invoke features for the print job. As such, PPDs function as drivers for all PostScript printers, by providing a unified interface for the printer's capabilities and features. Printer definitions use your print device PPD file to identify all of the features and settings supported by the device.

PostScript printers have their own description files, which should have come with the printer. For AFP and PCL printers, you can use one of the supplied PPD files, located in the following directory: <xPressionHome>\Publish\PPD

- Afpbwcs.ppd. Use for black and white cut-sheet AFP printers.
- Afpbwrf.ppd. Use for black and white roll-fed AFP printers.
- Afpccs.ppd. Use for color cut sheet AFP printers.
- Afpcrf.ppd. Use for color roll-fed AFP printers.
- Pclbw.ppd. Use for general purpose, black and white PCL printers.

The PCL and AFP PPD files we supply provide support for standard devices and may not entirely support non-standard PCL and AFP devices. If your device contains important features that are not supported by our PPD file, please contact your EMC Document Sciences representative to inquire about adding the required feature.

You would typically use one PPD file for each printer definition, or you could have more than one printer definition point to the same PPD file to enable different behaviors based on how you map the Markers to the features for that particular device. This design offers you almost limitless configuration possibilities. However, in most common usage of these features will involve one printer definition and one PPD file for each printer.

Note: Not specifying a PPD file in the printer definition may cause unpredictable results as the commands being sent to the printer may not be the correct commands for that specific device. For PostScript printers, it is recommended to always specify the PPD file that came with the printer.

Printer Definition Scenarios

This section identifies a number of common Printer Definition scenarios and describes how xPression handles the scenario.

- When a printer receives a Tray Pull command, it will terminate/eject the current sheet, and select a new sheet of paper (media).
- When a printer receives a plex change, it will terminate the current sheet and select a new sheet of paper.
- When a printer receives a plex command that is already in effect, it will still treat it as if it's a change in plex, terminating the current sheet and selecting a new sheet of paper, and will continue outputting without changing the plex mode.
- A combination of plex change and tray pull will result in only one new sheet of paper.

AFP Printer Definitions

See the following topics about AFP Printer Definitions:

- When image optimization is turned off in an xAdmin printer definition, images are repeatedly embedded into the output file, increasing the file's size.
- For AFP output, only TIFF Group 4 and 8–bit JPG images are supported for embedding in the output file, all other image types will be discarded.
- To support the new AFP emitter introduced with version 4.5, a new sample PPD file was created. It is named afpgeneral.ppd and located in xPressionHome/publish/ppd/. This new PPD file cannot be used with the old 4.2 AFP emitter. However, old PPD files can be used with the new emitter.

Printer Definition List: Options

You access the Printer Definition list by clicking the **xPublish Output Management** menu, and then clicking **Printer Definitions**.

This page contains the following elements.

Element Name	Description
Add Button	Enables you to create a new printer definition. For instructions, see Creating a Printer Definition, page 152, Printer Definition: General Tab Options, page 150, and Printer Definition: Printer Features Tab Options, page 152.
Copy	To create a duplicate item , select the item you want to copy and click **Copy**. The duplicate item appears in the list with the words "Copy of" placed before the original name.
Delete	To delete an existing item, select the item you want to remove and click **Delete**.
Printer Definition Name List	To edit the settings of an existing item, click the item name.

Printer Definition: General Tab Options

You can access the printer definition General tab options by clicking a printer definition name from the list or creating a new printer definition by clicking the Add button from the Printer Definition: List page. The General Information tab enables you to specify information about your printer.

The General tab contains the following elements.

Element Name	Description
Name	Supply a name for your printer. This setting is required.
Description	Supply a description of the printer.

Element Name	Description
Resolution	This is the resolution parameter for image conversion, barcodes, charts, and content. This setting is usually the same as the resolution of the print device. If the resolution is set too high, it may take longer to generate the image and the output file size may be larger. For AFP output, the only valid resolutions are 240, 300, 600 and 1440 dots per inch (dpi). All invalid resolutions will be changed to 1440 dpi.
Printer Description File	This option enables you to import a PPD file to define your print device settings. A PPD file is a file that describes the fonts, paper sizes, resolution, and other capabilities that are standard for a particular Postscript printer. xPression uses a PPD file to understand the capabilities of a particular printer. Once your PPD file is imported, you can map your PPD features to your Marker definitions. PPDs are provided with most PostScript printers, because device specific features may be invoked differently by each printer manufacturer. For AFP and PCL we provide the PPDs. This is because features on AFP and PCL printers are invoked in the same way for all printers. Supply the path to your PPD file. You can type the fully-qualified path and file name or click Browse and select the file from your file system. **Note:** If you are using Microsoft Internet Explorer 8, you will not be allowed to type a path directly into the Printer Description File field; you must use the browse button to locate the file.
Image Optimization	This feature enables xPression to reuse images while processing. When images are reused, the size of the output file can be reduced. For PDF output, images are always reused. You can set the Optimize Image option for PostScript and AFP printers. Select **On** to reuse images or **Off** to repeatedly embed images and not reuse them. **Note:** When this option is set to Off for AFP output, only Group4 and 8–bit JPEG images are embedded; other image formats are discarded.
Printer Resident Image	This feature applies only applies to xDesign content. You cannot use this feature for images that reside in documents created by the xPresso applications. Some printers enable you to store images in the printer memory. Storing an image in the printer memory increases printing performance because the image does not need to be downloaded from the xPression database. xPression enables you to use this feature by matching your Printer Resident Images with the images in your xPression database.

Element Name	Description
	For additional details and instructions for adding a printer resident image to this list appear in Creating a Printer Definition, page 152.

Printer Definition: Printer Features Tab Options

This tab enables you to define settings for the features described in your PPD file and map those settings to a Marker definition. To access the Printer Features tab options, click the **Printer Features** tab from the **Printer Definition** page. The Printer Features tab enables you to map your printer features to Marker definitions. This page contains the following elements.

Element Name	Description
Marker Name	This list contains the names of all of the Markers currently defined on your system.
Printer Feature	This list contains the names of all of the features described in the imported PPD file.
Feature Option	This list contains the valid settings for all of the features described in the imported PPD file.
Marker List	This list enables you to add a Marker/PPD Feature/Feature Option mapping to the printer definition. You must select a Marker Name, a Printer Feature, and a Feature Option, then click Add to add mapping to this list. You can add multiple mappings to this list. To remove a mapping from this list, select the mapping checkbox and click Delete.

It is not always possible to determine the functionality of a feature based on the name. Please ensure you understand what the feature does when you associate it with a marker.

Creating a Printer Definition

For each image that you store on the printer memory, you must store a copy of that image in the xPression database. xPression uses the xPression database version for viewing and editing purposes. Then you must map your printer resident images to the images in your xPression database.

Adding an image to this list does not actually load the image onto the printer. You must use your printer's import functions to load images to the printer prior to producing your documents.

To create a printer definition:

1. From the Printer Definition: List page, click **Add**.
2. In the Name box, supply a name for the printer.
3. In the Description box, supply a description for the printer.
4. In the Resolution box, set the resolution for image conversion, barcodes, charts, and content.

5. In the Printer Description File box, type the path and filename for your PPD file, or click Browse and select the PPD file.
6. From the Image Optimization list, select On or Off. When set to “On”, this option enables xPression to reuse images while processing, thereby reducing the size of the output file. Select On to reuse images or Off to not reuse images.
7. If you are using printer resident images, click **Add** to add the image to the Printer Resident Images list. A new row appears in the Printer resident Image list.

   In the Image Location box, type the image location in the printer memory.

   In the Image Family Name in xPression database list, select the image family name of the image you stored in the xPression database. This list is derived entirely from the images in the xPression database.
8. If you have imported a PPD file to define print device settings, click the **Printer Features** tab.
9. From the Printer Features tab, set up your Marker Name/Printer Feature/Feature Option mappings. You must associate a marker definition with the printer feature and feature option that you want to implement. When you have selected the Marker Name, Printer Feature, and Feature Option, click **Add**.
10. Click **Save** when finished.

Marker Definitions

Markers work side-by-side with printer definitions to provide a mechanism for implementing device features for output streams and documents. By themselves, markers do not identify or implement any of these features. A marker is simply a name that can be placed (as a “mark”) in a document or an output stream. Each printer definition enables you to map markers to your print device features. Markers exist independently from your devices, which enables you to use one marker to implement different features on different devices, or implement no feature at all.

Printer definitions use a PostScript Printer Description (PPD) file to identify all of the features and settings supported by the device. Once a listing of these features is imported into your printer definition, you can map your markers to any number of device features. When a document is processed through this printer definition, xPublish will implement the mapped feature each time it encounters a mapped marker. Even though PPD files were designed for PostScript printers, EMC Document Sciences provides PPD files for AFP and PCL printers.

Markers applied to output streams are called *startup markers*. They provide the initial settings for the stream. Markers applied to document sections can override the initial setting of the output stream marker. Markers are always associated with the start of a page. If a marker is placed in the middle of a page, they will be moved to the beginning of the page on which they occur.

See the following topics:

- How Do Markers Work?, page 154
- Two Types of Markers, page 155
- Startup Markers, page 156
- Marker Scenarios, page 156

- Paper Stock Accounting, page 158
- Markers and Batch, page 160
- Marker Options, page 160
- Creating a Marker Definition, page 160
- Downloading a Marker List File, page 161

How Do Markers Work?

To understand how markers work, you first need to understand the difference between markers and marker definitions.

Marker Definitions are created in xAdmin. They can identify plex mode, and if designated as a media marker, also define the metrics of the media for calculating package weight and/or thickness. Markers are labels. You place a marker in your output stream or document section to indicate where to perform the specific actions identified in the marker definition.

A high-level overview of the marker implementation process follows:

1. Create a marker definition for the feature or set of features you want to implement and name it accordingly.
2. Create Printer Definitions, page 148 for any print device that will implement device features. You must use the printer definition to import a PPD file that defines all of the functions available to that device.

3. Associate the marker definition with all printer features that you want to implement.
4. Place markers in your document section or output stream to indicate where xPression should perform the actions described in the marker definition. When processing the job, xPression will encounter the marker and execute the specified action according to the printer definition associated with that stream.

Consider the following scenario: A page in your document requires different media (for example, yellow paper), and this document could be run through one of two different printers. You only need to create one marker named "Yellow Paper" and insert it into your document at the proper location. Each of your printers will use a different printer definition and different PPD files. Within each printer definition, map the same Yellow Paper marker to the printer function for paper trays and select the tray that contains the yellow paper. When your document is run through each printer, the printer will recognize the marker and perform the change in paper trays.

Note: (1) Markers that are not associated with printer features will have no effect when encountered in the print stream.

(2) Ensure that you do not add multiple media markers that invoke the same feature to a single document, or you will encounter errors in your output, and in the case of AFP output, the AFP will be malformed.

(3) If multiple media markers are placed on a single page, only the last media marker will apply. Media markers that are not valid will not be output in metadata. EMC Document Sciences recommends using one media marker per page only, and including all needed features in that media marker.

Two Types of Markers

There are two types of markers, media markers and non-media markers. Media markers indicate a change in the print media. Non-media markers do not require a change in media. The reason that we have two types of markers is because xPression has to keep track of media attributes and plex mode when a media marker is used. For example, xPression must track the weight and thickness of pages in a package for reporting purposes. Plex mode must be tracked so xPression will know where to insert blank verso pages. Markers that merely control device features, such as setting the resolution or jogging, do not need to be tracked.

Some printers have a "look ahead" process when handling media markers, while others do not. This results in inconsistent application of media markers, such as tray pulls. To ensure consistent behavior, the General tab of the Stream Definition page contains the **Force New Sheet for Media Marker if in Duplex** option. When selected, a New Page Recto will be employed for duplex documents in cases where a media marker should be applied to a new page.

To use this feature, you must have the following conditions:

- Your Output Stream is set to duplex mode
- The previous page is a recto page
- The current page has a defined media marker

For more information, see Stream Definition General Tab Options, page 235.

Note: It is possible to define a non-media marker that performs tray pulls or changes the plex mode, but xPression's internal accounting will be incorrect. For example, an xPression function that counts the number of sheets will have incorrect data.

Non-media markers are implemented as "switches" in that they will not automatically restore print device settings to their default level after the marker has run it's course. If you use a section-level marker to temporarily override the default settings that were defined in the output stream marker, you must use an additional marker to change the settings back to their original values.

You can set an end-point for a media marker, enabling you to specify which marker should be invoked when the current marker ends.

When there are multiple media markers on a page all media markers will be applied. xPression assesses pages with multiple media markers to determine if the same media markers are applied to multiple pages and, when they are the same, the media markers are applied as appropriate. When xPression determines that a page has different media markers they are applied to that page as appropriate.

Startup Markers

Startup markers are markers that are associated with an output stream. They enable you to identify a number of device specific features prior to sending any pages to the printer. These settings can be considered "default" settings for the stream.

For example, you might want to specify a certain paper tray, define a particular resolution, set the starting plex mode for a stream, or enable or disable other device features. These settings will be applied prior to sending any pages to the printer and will remain in effect until a marker is encountered that changes these settings. There is no method for setting the end point for a marker. The features implemented through any marker remain in effect until another marker changes those features.

Marker Scenarios

The following scenarios demonstrate some common marker implementations:

- One Simplex Stream and One Duplex Stream from the Same Printer
- Sending Two Streams with Different Media Needs to the Same Printer
- Markers and Recto/Verso Pages
- Markers and Customer Packages

One Simplex Stream and One Duplex Stream from the Same Printer

There are two common methods for printing a simplex and duplex stream to the same printer.

Method One:

1. Create a printer definition and select a PPD file for it.
2. Create two markers: Simplex and Duplex.
3. Map the two markers to the respective simplex and duplex features on the printer definition.
4. On the simplex stream, select the Simplex as the startup marker. On the duplex stream, select the Duplex as the startup marker.
5. Ensure both streams use the same device.

Method Two:

1. Create a single marker named “Plex”.
2. Create a printer definition named “PrintSimplex” and select a PPD file for it.
3. For the PrintSimplex printer definition, map the Plex marker to the simplex feature.
4. Create a second printer definition and name it “PrintDuplex”. Select the same PPD file that you used for the first printer definition.
5. For the PrintDuplex printer definition, map the Plex marker to the duplex feature.
6. Create two output streams and select the Plex marker for both streams.
7. Ensure one stream uses the PrintSimplex printer definition and the other stream uses the PrintDuplex printer definition.

Both methods will create the desired output, but method two would enable you to specify different resolution for each stream.

Sending Two Streams with Different Media Needs to the Same Printer

In this example, the customer needs to print a set of documents that includes cover letters on preprinted stock and membership cards on perforated card stock, and also print another set of documents in plain paper. The preferred method for achieving this output is:

1. Create two printer definitions: SpecialStock and PlainPaper. Use the same PPD with both.
2. Create three markers: CardStock, CoverLetter, and PlainStock.
3. Set the first two markers to “1” sheet and use PlainStock as the “Next Marker”.
4. In the cover letter document, apply the CoverLetter marker.
5. In the membership card document, apply the CardStock marker.
6. In the SpecialStock printer definition, map all three markers to the correct paper tray.
7. In the PlainPaper printer definition, only map the PlainStock marker to the plain stock paper tray.

8. Create one stream for the plain paper documents. Use PlainPaper as the printer definition and PlainStock as the startup marker.
9. Create a second stream for the special stock documents. Use SpecialStock as the printer definition.

Using this method, you can enable a single printer to behave differently from within the same job.

Markers and Recto/Verso Pages

The following items describe how Markers interact with recto/verso pages in your output.

- The first page in the stream is always a recto/odd page. Markers cannot change this because it is the starting page.
- When a Marker will cause a new sheet to be output on the printer, it should be designated as a Media Marker, and be associated with a new page. When in duplex, it needs be a new recto page. In simplex mode, it can be a recto or verso page. This must be done to keep sheet outputs the same as they will occur on the printer.
- If only Markers are used blank pages *will not* be inserted into the stream to ensure that Marker designations will match what occurs on the printer. However, page and sheet counts will reflect what actually comes out on the printer, provided the user ensures their section breaks correspond with what the Markers will do on the printer.
- Metrics such as package weight and thickness, will be reflected based on what will come out on the printer, provided the user matches appropriate Markers with appropriate page breaks.
- The designations of plex, and Media vs. non-Media markers let DCPI OP know how to account for what will occur at the printer, so that content stamp and paper weight and thickness is calculated correctly.

Markers and Customer Packages

The notion of “Packaging” needs to be understood because some blank pages are inserted into the output stream regardless of Markers. The premise of a package is that it is intended for one customer. A package can be one or more documents, and must always exist on a set of full sheets of paper. The content for one customer should never reside on the back side of the sheet of another customer’s content.

Paper Stock Accounting

xPression enables you to keep track of media, or paper stock, used in a job. This is useful for print service bureaus that need to know all the different paper stock used in a job, or for when a print operator needs to know what paper stock to load into a printer for a job. This information can be placed in an metadata XML file, or it can be placed on separator sheets, through the use of content stamps and system functions.

Paper stock is accounted for in xPression through the tracking of markers. For each job run, a media count for each marker in the job is accumulated by xPression. Media counts are accumulated on three

levels: stream, partition (output file), and package. There is no “current count” available for media counts; counts will only be totals as accumulated. Totals will only be accurate in the appropriate places, such as on an End of Partition separator sheet, or in the metadata at a partition or stream level.

Note: Because of processing logic, if you select a media marker as an output stream startup marker, any media count information from that marker may be incorrect. For accurate media counts, only place media markers at the beginning of a document.

Metadata XML File

To include media counts in a metadata XML file, you must enable the Generic Index option on a print or email distribution definition, and select a level for the Output Media Counts option:

- **Stream Level.** Adds a metadata element at the stream level that displays the media totals for the entire stream.
- **Partition Level.** Adds a metadata element at the partition level that displays the media totals for each partition.
- **Package Level.** Adds a metadata element at the package level that display the media totals for each package.

For more information, see Print Device Settings, page 245 or E-mail Device Settings, page 248.

Separator Sheets

To include media counts on a separator sheet, you must place a content stamp on the sheet, whose data contains the information. The text content stamp data can be defined using the following system functions:

- **streamMediaCounts(mediaMarkerName).** This function returns the number of sheets of media counted in the stream for the marker specified in the mediaMarkerName parameter. If the name specified is not a marker, it always returns zero.
- **partitionMediaCounts(mediaMarkerName).** This function returns the number of sheets of media counted, so far, in the partition for the marker specified in the mediaMarkerName parameter. If the name specified is not a marker, it always returns zero.
- **packageMediaCounts(mediaMarkerName).** This function returns the number of sheets of media counted, so far, in the package for the marker specified in the mediaMarkerName parameter. If the name specified is not a marker, it always returns zero.
- **getMediaDetails(mediaMarkerName).** This function returns the details of the media marker specified in the mediaMarkerName parameter so that this information may also be placed on the separator sheet, or elsewhere, so that the user can know in terms of the printer. It returns a string in the a form similar to the following:

  ```
  Feature1:Invocation1;Feature2;Invocation2;...
  ```

For more information on the system functions, see Appendix B, System Function Definitions.

For information on creating content stamps, see Content Stamp Definitions, page 161; for information on creating separator sheets, see Separator Sheet Definitions, page 183.

Markers and Batch

If you queue documents for Batch, place media markers at the beginning and end of the document to ensure that the plex mode is in a known state when starting the next document. Media markers will override default settings for the current job. So, if you do not know the default settings, it is recommended that an initial marker be employed to ensure that settings are appropriate for the job.

Marker Options

To view the Marker options, click **Add** from the Marker list page. The Marker Definition page appears. This page contains the following elements.

Element Name	Description
Name	Supply a name for the marker. The name must be between 1 and 255 alphanumeric characters in length and is case sensitive.
Description	Supply an optional description of the marker.
Plex Mode	You can select Simplex, Duplex, or No Change. When "No Change" is selected, no plex mode setting will be added to the marker. The plex mode that is in effect at the time the marker is implemented will be maintained. You must match this plex mode setting to the to the plex mode setting of the printer feature to which you are mapping. See Duplex Printing Limitations, page 236 for limitations.
Media Marker	Media markers enable you to track the usage of your media for auditing or inventory control. In order to track media usage, you must select Yes in the Media Marker list. You are not required to specify a media marker, even if your marker indicates a change in media. Media markers are for accounting purposes only. If you fail to specify a media marker, your media accounting will be inaccurate.
Media Name	Supply a name for the media.
Number of Sheets	Specify the number of sheets that will be affected by the marker.
Thickness (mms)	Specify the thickness of a single sheet of media in millimeters.
Weights (gms)	Specify the weight of a single sheet of media in grams.
Next marker	Specify the next marker to apply to the package after this marker has run its course as specified in "Number of Sheets". When the current marker reaches its end point, xPression will automatically invoke the marker you specify here.

Creating a Marker Definition

To create a Marker Definition:

1. From the xPublish Output Management menu, click **Marker Definitions**.

2. The Marker List page appears. This list displays all existing marker definitions. To add a new marker definition, click **Add**. The Add a New Marker page appears. See Marker Options, page 160 for more information about the options on this page. Your marker can be a media marker or a non-media marker.
3. In the Name box, supply a name for the marker. The name must be between 1 and 255 alphanumeric characters in length.
4. In the Description box, supply a description for your marker.
5. In the Plex mode list, define the plex mode for the marker.
6. Media markers enable you to track the usage of your media for auditing or inventory control. If you want to activate media accounting, select **Yes**. See Marker Options, page 160 for more information about these options
7. In the Media Name box, supply a name for the media.
8. In the Number of Sheets box, specify how many sheets of paper will be affected by the marker.
9. In the Thickness (mms) box, specify the thickness of a single sheet of media in millimeters.
10. In the Weight (gms) box, specify the weight of a single sheet of media in grams.
11. In the Next marker list, specify the next marker to apply to the package after this marker has run its course as specified in “Number of Sheets”. When the current marker reaches its end point as specified in “Number of Sheets”, xPression will automatically invoke the marker you specify here.
12. Click **Save** when completed.

Downloading a Marker List File

The marker list file contains all the marker definitions that are defined in xAdmin. Document designers can import the list file into xPresso for Adobe InDesign or xPresso for Word 2007 and use it to add markers in the appropriate place in the document. Ensure you save the file in a location that will be accessible from the design tools.

To download the marker list file:

1. Click **Download**. A File Download message appears.
2. Click **Save**. A Save As dialog box appears.
3. Browse to the location where you want to store the file.
4. Click **Save**.

Content Stamp Definitions

Content stamps enable you to apply barcodes, images, and text strings directly to your documents after composition. Content stamps can be applied to a fixed location on the document without affecting the composition of the document. Stamps usually consist of variable format, but may

include static content. You can even set the z-order of the stamp so that it appears as a foreground item or a background item.

If you want the content stamp to appear in multiple locations, you must create a definition for each location. You can reuse the same definition in as many documents as needed, as long as the location is valid in each document. Content stamps are implemented when you add them to one or more Stream Definitions, page 233.

Content stamps are placed on the page in the same order they appear in the xAdmin interface. If you are layering one content stamp over another, ensure that the background stamp is implemented first.

If you are producing HTML or text output, content stamps are ignored and an error is issued.

Note: Since PCL is limited to printing text in 0, 90, 180, and 270 degree rotations, text content stamps are also restricted to these rotations in PCL output.

Bar Code Content Stamps

Bar codes enable you to encode information that can be read by a bar code reader, generally attached to a finishing device. xPublish supports 3 of 9, 2 of 5 Interleaved, POSTNET, Code 128, DataMatrix, OMR Marks, PDF417, Intelligent Mail, and QR Code bar codes. For general information about bar codes, see the *xAdmin Integration Guide*.

When you define a bar code for xPression, you can specify:

- A unique name.
- The bar code type.
- The position of the bar code on the page. You can define horizontal and vertical offsets, orientation, and z-order.
- The bar code font name and size.
- Bar code data (in the form of an expression).
- Check characters are additional characters appended to bar codes to guarantee good reads. Check characters are necessary on some bar codes that are prone to human error. For example, Interleaved 2 of 5 is a very dense, numeric-only bar code, but it is prone to substitution errors. You should always use check characters with this code. Other codes, such as Code 128 and Code 3 of 9, are self-checking and seldom require a check character.
- You can display human readable text with Type 2 of 5 Interleaved (Int 25), Type 3 of 9 (Code 39), Code 128, and PostNet bar codes. The readable text shows the value of the bar code. xPression assumes that the readable text has the same orientation as the bar code. The numbers below the barcode are an example of human readable text.
- When you choose to include human readable text with a bar code, you can specify font options for the text. The specific options depend on the bar code type.

Caution: The dollar sign ($) character is not supported for use in xPression bar code data.

Bar Code Images

When xPression generates a bar code in document output, the bar code is actually an image. Currently the third-party tool used to create the bar codes only supports RGB color, and doesn't support CMYK. Although the bar codes may look black and white, they are actually RGB color, which may cause issues with some bar code readers.

You can force black and white images for bar codes by setting the **TiffG4ImageasBarcode** parameter in the xPression Server DCPI.properties file to "true". When this parameter is set to "true" (the default), Tiff G4 will be used as the bar code image format. If this parameter is set to "false", the ImagePreferenceFor*OutputFormat* parameter (also located in the DCPI.properties file) will be used to determine the bar code image format. The ImagePreferenceFor*OutputFormat* parameter controls all the images in an output stream, the TiffG4ImagesasBarcode parameter controls only bar code images.

Note: The PNG image format is not supported for PostScript output, so it is important to ensure that PNG is not listed as the image preference in the ImagePreferenceForPS parameter.

Specifying the Width of Your Bar Code

Barcode width is determined by several factors: the barcode weight, the barcode resolution, and the width of the narrowest bar. You can use these factors in a formula to determine an approximate barcode width. The key to determining the bar code width is understanding the width of the narrowest bar in your barcode. In order to increase the barcode width, you must increase the width of the narrowest bar.

The default width of the narrowest bar is easy to determine. It is the result of this equation: 72 / barcode resolution.

The barcode resolution is a global setting defined in the DCPI.properties file. By default, the resolution is set to 96. In this example, we will assume you have set the barcode resolution to 77. If your barcode resolution is set to 77, then the default width of your narrowest bar is: **72 / 77 = .935**.

The narrowest bar value can be incremented by increasing or decreasing the barcode weight. However, the narrowest width value can only be incremented in multiples of the default value. The next highest value for the width of the narrowest bar is: .935 * 2 = **1.87**. The next highest value after that is: .935 * 3 = **2.805**.

To increase the width of the narrowest bar to the next acceptable value (1.87), use the following formula:

Barcode weight / Default width of narrowest bar = X

Round X to the next lowest whole number and insert the result into the following equation:

.935 * X = New width of narrowest bar

For example, if you set the barcode weight to .936:

.936 / .935 = 1.001

1.001 is rounded to one. .935 * 1 = **.935**

Notice that in this scenario, the width of the narrowest bar remains unchanged.

Let's try another example using the barcode weight value of 1.5:

1.5 / .935 = 1.604

1.604 is rounded to one. .935 * 1 = **.935**

Again, the width of the narrowest bar is unchanged.

Now let's try an example that give us the result we want. Use the barcode weight value of 1.872:

1.872 / .935 = 2.002

2.002 is rounded to two. .935 * 2 = **1.870**

The width of the narrowest bar has been increased to the next acceptable value.

Content Stamp Definitions: List Options

You define content stamps in the Content Stamp section of Publish Output Management. Creating and editing content stamps of all types begin on this page. This page contains the following elements.

Element Name	Description
Add Button	Enables you to create a new content stamp.
Copy	To create a duplicate item, select the item you want to copy and click **Copy**. The duplicate item appears in the list with the words "Copy of" placed before the original name.
Delete	To delete an existing item, select the item you want to remove and click **Delete**.
Content Stamp Name List	To edit the settings of an existing item, click the item name.

Content Stamp: General Tab Options

You can access the content stamp General tab by creating a new content stamp or clicking a content stamp name from the Content Stamp: List page. The General tab enables you to define the stamp name, positioning, and conditions.

This page contains the following elements.

Element Name	Description
Name	Type a unique name for the content stamp. The name can be up to 255 alphanumeric characters. This name cannot contain spaces.
Horizontal Offset	For Text stamps, it is the horizontal distance, between the left edge of the page and the bottom-left corner of the character baseline. For Image and Barcode stamps, it is the horizontal distance between the left edge of the page and the top-left corner of the image or barcode. Distances are measured in points. There are 72 points in 1 inch.
Vertical Offset	For Text stamps, it is the vertical distance between the top edge of the page and the bottom-left corner of the character baseline. For Image and Barcode stamps, it is the vertical distance between the top edge of the page and the top-left corner of the image or barcode. Distances are measured in points. There are 72 points in 1 inch.
Rotation	The rotation of the stamp, in degrees. AFP output supports cardinal rotations (0, 90˚, 180˚, and 270˚) only.
Front to Back	The Front to Back setting enables you to set the position of the stamp relative to the composed content, either in the foreground (Over Page Content) or background (Under Page Content). If you want the stamp to overprint composed content, set the Front to Back option to **Over Page Content**, if you want the stamp to function as a watermark in the background of the composed content, set the Front to Back option to **Under Page Content**.
Condition	You can control when and where content stamps appear in your documents with page, package, or variable conditions. For instructions, see Page, Package, and Variable Conditions, page 165.

Be aware that barcode position in xPublish is handled differently than bar code positioning in CompuSet. If you are trying to replicate CompuSet barcodes in an xPublish document, the horizontal and vertical offset values will be different.

Page, Package, and Variable Conditions

The Condition section of the Content Stamp General Tab enables you to define criteria that determines when content stamps will and will not appear in your output. Package, Page, and Variable conditions can be used separately or in conjunction with one another to produce the desired result. If any of the conditions are not defined, xPression will consider the condition true and qualify any page or package for that condition. For any content stamp to appear in your output, all the conditions must either be true or assumed true by being undefined.

- A Page condition enables you to define which pages in a package receive the content stamp and which do not, provided that the Package and Variable conditions are also true or undefined

(assumed true). If a Page Condition is **not** defined, then every page will receive the content stamp provided that the Package and Variable conditions are true or not defined (true by default). Even if a Page condition is true, the content stamp won't appear in your output if a defined Package or Variable condition fails to qualify a package. See Using Page and Package Conditions, page 167 for more information.

- A Package condition enables you to define which packages receive the content and which do not. This condition does not determine which page(s) receive the content stamp, it merely determines if the documents in a package are eligible or ineligible to receive a content stamp. If the condition relies on document data mapped Output Variables, and if the first document in a package meets the condition for receiving a content stamp, then all documents in the package will receive the stamp, even if they do not otherwise meet the condition. The first document's data mapped output variables are promoted to the package level. If a Package condition is not defined, and therefore assumed to be true, every package will be eligible for the content stamp provided that the Page and Variable conditions are also true or undefined. See Using Page and Package Conditions, page 167 for more information.
- A Variable condition enables you to define the eligibility of packages based on the change of a variable value between packages. With this feature you can detect the change in a variable between packages during a batch run. This condition does not determine which page(s) receive the content stamp, it merely determines if the documents in a package are eligible or ineligible to receive a content stamp. If the first document in a package meets the condition for receiving a content stamp, then all documents in the package will receive the stamp, even if they do not otherwise meet the condition. When using Variable conditions, ensure you are aware of the following items:
  - The first package in your batch run will automatically qualify for the variable condition. The variable value set for the first package will be the initial value. The first package will receive the content stamp for both "changes" and "does not change" options.
  - All other Page or Package conditions defined for the content stamp will be active regardless of the result of the variable condition. For example, if the "change" variable is true but the package condition is false, no content stamp is applied.
  - If the "change" variable is true and the content stamp also contains a page condition, the page condition will apply to each page of the package.

  See Using Variable Conditions, page 168 for more information.

For more information, see:

- Basic Scenarios for Content Stamp Conditions, page 167
- Using Page and Package Conditions, page 167
- Using Page and Document Conditions to Place Content Stamps on Imposed Pages, page 168
- Using Variable Conditions, page 168
- Conditions with Multiple Page Orientations, page 169

Basic Scenarios for Content Stamp Conditions

The following basic scenarios demonstrate how the Page, Package, and Variable conditions operate independently and in conjunction with one another.

- **If you define only a Page condition** — Because the Package and Variable conditions are undefined and therefore considered to be true, the content stamp will appear on any page that meets the page condition regardless of which package it is in.
- **If you define only a Package condition** — Because the Page and Variable conditions are undefined and therefore considered to be true, the content stamp will appear on every page of any package that satisfies the Package condition.
- **If you define only a Variable condition** — Because the Page and Package conditions are undefined and therefore considered to be true, the content stamp will appear on every page of any package that satisfies the Variable condition.
- **If you define a Page and Package condition** — The content stamp will appear only on qualifying pages in qualifying packages. The Package condition must be satisfied before the Page condition is even considered. If a qualifying package contains one or more qualifying pages, only those pages will receive the content stamp. The undefined Variable condition is considered to be true and will not affect the placement of the content stamp.
- **If you define a Package and Variable condition** — In this scenario, a package must satisfy both the Package and Variable conditions. If a Package satisfies both conditions, the content stamp will appear on every page in the qualifying package because the Page condition is undefined and considered to be true.
- **If you define a Page and Variable condition** — The content stamp will appear only on qualifying pages in qualifying packages. The Variable condition must be satisfied before the Page condition is even considered. If a qualifying package contains one or more qualifying pages, only those pages will receive the content stamp. The undefined Package condition is considered to be true and will not affect the placement of the content stamp.

  For example, if you want the content stamp to appear on the first page of any package where the variable has changed, set the Page condition to CurrentPageInPackage=1 and set the Variable condition to “changes”.
- **If you define a Page, Package, and Variable condition** — First, a package must satisfy both the Package and Variable conditions. If a package satisfies both conditions, then the Page condition is considered. The content stamp will appear on any page that satisfies the Page condition, provided that the page resides in a qualifying package.

Using Page and Package Conditions

These steps assume you have already created your content stamp. To create a content stamp, see Bar Code Content Stamps, page 162.

To use Page and Package Conditions:

1. Open a Content Stamp Definition.
2. On the General tab, locate the Condition section.

3. Identify the type of condition you want to define by selecting the checkbox next to Package or Page. When Package or Page is selected, xPression enables you to supply a value in the provided box. You can define more than one type of condition for your content stamp. See Page, Package, and Variable Conditions, page 165 for more information on these conditions.
4. Click the **browse** button to open the Expression Editor to build your expression. For more information, see Working with the Expression Editor, page 31.
5. Click the Data tab and then click **Save**.

Caution: When you are using a literal string value in an expression, the literal string value must appear at the beginning of the expression as follows, {Literal} = {Variable}. The expression will fail if you reverse this order. However, if your literal value is date or numeric, the situation is reversed and the literal must appear at the end of your expression.

Using Variable Conditions

These steps assume you have already created your content stamp. To create a content stamp, see Bar Code Content Stamps, page 162.

To use Variable Conditions to detect a change in a variable value between packages:

1. Open a Content Stamp Definition.
2. On the General tab, locate the Condition section.
3. Select **Variable**. When Variable is selected, xPression enables two drop-down boxes. See Page, Package, and Variable Conditions, page 165 for more information about Variable conditions.
4. The first drop-down box contains a list of all output variables defined in xAdmin. Click the arrow and select the variable you want to use for evaluating the eligibility of a package for content stamps.
5. The second drop-down box contains two values: **changes** and **does not change**. Select “changes” if you want to make the package eligible for the content stamp only when the value of the defined variable in the package is different from the previous package. Select “does not change” when you want to make the package eligible for the content stamp when the value of the defined variable in the package matches the value from the previous package.
6. Click the Data tab and then click **Save**.

Using Page and Document Conditions to Place Content Stamps on Imposed Pages

Content stamps used for impositions must use built-in functions that have meaning for an imposed sheet. If a built-in function has no relevance to an imposition scenario, it will be ignored. For example, in N Up impositions, any reference to the “package” is meaningless. Currently, xPublish will ignore all page and document conditions attached to content stamps when the content stamp is used in an imposition scenario.

Conditions with Multiple Page Orientations

If you create a job with multiple page orientations, you need to define conditions for your content stamps for each orientation.

For example, if you have a portrait document with a landscape page within it, and you need the stamp to appear in the upper left corner of each page, you must define a stamp to appear on the portrait pages, and a separate one to appear on the landscape page. You can then use an inclusion condition to include the correct stamp on the correct page orientation.

If you do not define page or package conditions, the content stamp appears on every page of the document including phantom pages. A phantom page is the backside of a duplex page that contains no text.

Define page and package conditions by creating data expressions. An expression is a row of data, separated by an operator, that results in a condition. For example:

```
Current Page Count > 100
```

This simple expression includes a bar code on each document that is more that 100 pages in length.

Content Stamp: Int 125 Barcode Stamp Tab Options

Also called 2 of 5 Interleaved format. If the length of the bar code is not even, it will be padded with a 0 to the right. Unsupported characters are replaced with 0s. Refer to 2 of 5 Interleaved Bar Codes for more information. You can access the Stamp tab by creating a new content stamp or clicking a content stamp name from the Content Stamp: List page and click the **Stamp** tab.

This page contains the following elements.

Options	Definition
Stamp Type	Select the type of stamp from the list. You can choose Bar Code, Text, or Image. Your selection for this item determines the remaining options on this tab. This table provides information about Bar Code stamps only. For more information on other options, refer to Content Stamp: Text Stamp Tab Options, page 178 or Content Stamp: Image Stamp Tab Options, page 179.
Bar Code Type	Select a bar code type from the list. You can choose INT 25, Code 39, Code 128, DataMatrix, OMR, PDF417, PostNet, Intelligent Mail, or QRCode. Each type has a unique set of options. This table provides information on the INT 25 bar code.
Bar Weight	The weight of the bar in points.
Bar Height	The height of the bar in points.
Make Human Readable	Select if you want to include human readable text with the bar code.
Font	Select the font type to apply to human readable text from the list. This option is only available if you select the Make Human Readable check box.

Options	Definition
Point Size	Type the font size that you want to use for human readable text. This option is only available if you select the Make Human Readable check box.
Include Modulus 10 Check Character	Select this option to include a check character in the bar code.

Content Stamp: Code 39 Barcode Stamp Tab Options

Also called 3 of 9 format. Unsupported characters are replaced with a SPACE character. Refer to 3 of 9 Bar Codes for more information. You can access the Stamp tab by creating a new content stamp or clicking a content stamp name from the Content Stamp: List page and click the **Stamp** tab. This page contains the following elements.

Options	Definition
Stamp Type	Select the type of stamp from the list. You can choose Bar Code, Text, or Image. Your selection for this item determines the remaining options on this tab. This table provides information about Bar Code stamps only. For more information on other options, refer to Content Stamp: Text Stamp Tab Options, page 178 or Content Stamp: Image Stamp Tab Options, page 179.
Bar Code Type	Select a bar code type from the list. You can choose INT 25, Code 39, Code 128, DataMatrix, OMR, PDF417, PostNet, Intelligent Mail, or QRCode. Each type has a unique set of options. This table provides information on the Code 39 bar code.
Bar Weight	The weight of the bar in points.
Bar Height	The height of the bar in points.
Make Human Readable	Select if you want to include human readable text with the bar code.
Font	Select the font type to apply to human readable text from the list. This option is only available if you select the Make Human Readable check box.
Point Size	Type the font size that you want to use for human readable text. This option is only available if you select the Make Human Readable check box.
Character Set	Character Set - Select the character set that you want to use. You can choose **Standard** or **FullASCII**. FullASCII includes all 128 ASCII characters. Standard includes these 43 characters: 1234567890ABCDEFGHIJKLMNOPQRSTUVWXYZ - . $ / + % and the SPACE character.
Include Modulus 43 Check Character	Select this option to include a check character in the bar code.

Content Stamp: Code 128 Barcode Stamp Tab Options

Also called SSCC-18 and SCC-14. Code 128 supports the 128 characters in the standard ASCII character set. Unsupported characters are replaced with the SPACE character. Refer to Code 128 Bar Codes for more information. You can access the Stamp tab by creating a new content stamp or clicking a content stamp name from the Content Stamp: List page and click the **Stamp** tab. This page contains the following elements.

Options	Definition
Stamp Type	Select the type of stamp from the list. You can choose Bar Code, Text, or Image. Your selection for this item determines the remaining options on this tab. This table provides information about Bar Code stamps only. For more information on other options, refer to Content Stamp: Text Stamp Tab Options, page 178 or Content Stamp: Image Stamp Tab Options, page 179.
Bar Code Type	Select a bar code type from the list. You can choose INT 25, Code 39, Code 128, DataMatrix, OMR, PDF417, PostNet, Intelligent Mail, or QRCode. Each type has a unique set of options. This table provides information on the Code 128 bar code.
Bar Weight	The weight of the bar in points.
Bar Height	The height of the bar in points.
Make Human Readable	Select if you want to include human readable text with the bar code.
Font	Select the font type to apply to human readable text from the list. This option is only available if you select the Make Human Readable check box.
Point Size	Type the font size that you want to use for human readable text. This option is only available if you select the Make Human Readable check box.
Include Modulus 103 Check Character	Select this option to include a check character in the bar code.

Content Stamp: Data Matrix Barcode Stamp Tab Options

DataMatrix is a high-capacity, 2-D bar code format that enables encoding relatively large amounts of data. This format does not support human-readable text. You can access the Stamp tab by creating a new content stamp or clicking a content stamp name from the Content Stamp: List page and click the **Stamp** tab.

This page contains the following elements.

Element Name	Description
Stamp Type	Select the type of stamp from the list. You can choose Bar Code, Text, or Image. Your selection for this item determines the remaining options on this tab. This table provides information about Bar Code stamps only. For more information on other options, refer to Content Stamp: Text Stamp Tab Options, page 178 or Content Stamp: Image Stamp Tab Options, page 179.
Bar Code Type	Select a bar code type from the list. You can choose INT 25, Code 39, Code 128, DataMatrix, OMR, PDF417, PostNet, Intelligent Mail, or QRCode. Each type has a unique set of options. This table provides information on the DataMatrix bar code.
Bar Weight	The weight of the narrowest bar in points. The default value differs according to bar code type. ForDataMatrix it is 0.8892.
Encoding	This option enables you to choose the encoding for the bar code. You can select the following encoding types: • ASCII includes the 128 standard ASCII characters. • C40 includes numeric and upper-case characters. • Text includes numeric and lowercase characters. • Base256 encodes 8-bit data.
Format	Determines the smallest size of the symbol. If the data encoded cannot fit in the selected size, a larger symbol will be created. To see a full listing of all format sizes, their capacities and error tolerances, see Format Size Chart, page 172.

Format Size Chart

This chart displays all format sizes, their capacities and error tolerances.

	Capacities			
Size	**Numeric**	**Alphanumeric**	**Binary**	**Max Correctable Error/Erasure**
10 x 10	6	3	1	2
12 x 12	10	6	3	3
14 x 14	16	10	6	5/7
16 x 16	24	16	10	6/9
18 x 18	36	25	16	7/11
20 x 20	44	31	20	9/15
22 x 22	60	43	28	10/17
24 x 24	72	52	34	12/21
26 x 26	88	64	42	14/25
32 x 32	124	91	60	18/33

	Capacities			
Size	**Numeric**	**Alphanumeric**	**Binary**	**Max Correctable Error/Erasure**
36 x 36	172	127	84	21/39
40 x 40	228	169	112	24/45
44 x 44	288	214	142	28/53
48 x 48	348	259	172	34/65
52 x 52	408	304	202	42/78
64 x 64	560	418	278	56/106
72 x 72	736	550	366	72/132
80 x 80	912	682	454	96/180
88 x 88	1152	862	574	112/212
96 x 96	1392	1042	694	136/260
104 x 104	1632	1222	814	168/318
120 x 120	2100	1573	1048	204/390
132 x 132	2608	1954	1302	248/472
144 x 144	3116	2335	1556	310/590
8 x 18	10	6	3	3
8 x 32	20	13	8	5
12 x 26	32	22	14	7/11
12 x 36	44	31	20	9/15
16 x 36	64	46	30	12/21
16 x 48	98	72	47	14/25

Content Stamp: OMR Barcode Stamp Tab Options

OMR, or Optical Mark Reading, represents a string of binary data. This format does not support human-readable text. You can access the Stamp tab by creating a new content stamp or clicking a content stamp name from the Content Stamp: List page and click the **Stamp** tab. This page contains the following elements.

Options	Definition
Stamp Type	Select the type of stamp from the list. You can choose Bar Code, Text, or Image. Your selection for this item determines the remaining options on this tab. This table provides information about Bar Code stamps only. For more information on other options, refer to Content Stamp: Text Stamp Tab Options, page 178 or Content Stamp: Image Stamp Tab Options, page 179.
Bar Code Type	Select a bar code type from the list. You can choose INT 25, Code 39, Code 128, DataMatrix, OMR, PDF417, PostNet, Intelligent Mail, or QRCode. Each type has a unique set of options. This table provides information on the OMR bar code.

Options	Definition
Bar Weight	The weight of the bar in points.
Bar Height	The height of the bar in points.
Mark Spacing	Type the spacing (in points) between the marks.
Number Of Marks	Type the number of marks that should make up the bar code. This setting applies to each section of the stamp. There is also a Number of Marks setting on the Data tab, which applies to the entire data expression.
User Start Mark	Select to include a start mark.
Use End Mark	Select to include an end mark.
Parity Mark	Select the type of parity that you want to use. You can choose Even, Odd, or None. If you choose None, then no parity bit will be applied. See About Parity Marks, page 174 for more information.
Parity Mark Position	Provide a positive integer value indicating where the parity bit should appear in the bar code. When this value is 1 the parity bit will be the leftmost (most significant) bit. If greater than the length of the bar code, the parity bit will be placed in the rightmost (least significant) bit. See About Parity Marks, page 174 for more information.

About Parity Marks

The parity bit will be set as required to provide the required parity. For example, if the bar code data was "1010101", and you chose Odd Parity, with position of 2, it would become: "11010101." Note that 2nd position is added, and it is "1" to make total number of non-zero characters odd. The parity bit is added; it does not replace or change any other bit. If you had chosen even parity in this case, the parity bit would be 0.

Content Stamp: PDF417 Barcode Stamp Tab Options

PDF 417 is a multi-row, 2-D bar code format that enables encoding relatively large amounts of data. This format does not support human-readable text. You can access the Stamp tab by creating a new content stamp or clicking a content stamp name from the Content Stamp: List page and click the **Stamp** tab.

This page contains the following elements.

Options	Definition
Stamp Type	Select the type of stamp from the list. You can choose Bar Code, Text, or Image. Your selection for this item determines the remaining options on this tab. This table provides information about Bar Code stamps only. For more information on other options, refer to Content Stamp: Text Stamp Tab Options, page 178 or Content Stamp: Image Stamp Tab Options, page 179.

Options	Definition
Bar Code Type	Select a bar code type from the list. You can choose INT 25, Code 39, Code 128, DataMatrix, OMR, PDF417, PostNet, Intelligent Mail, or QRCode. Each type has a unique set of options. This table provides information on the PDF417 bar code.
Bar Weight	The weight of the bar in points.
Bar Height	The height of the bar in points.
Number of Columns	The number of data columns in the symbol.
Error Correction Level	Type the error correction level, a number between 0 and 8. The higher the number, the more damage that the bar code can sustain and still be read. Refer to your code reader documentation for details.
Truncated Format	Select this option to use the truncated format which removes the right hand side of the symbol.

Content Stamp: POSTNET Barcode Stamp Tab Options

The PostNet format is used to encode ZIP codes. PostNet supports numeric characters only, and replaces unsupported characters with 0s. You can access the Stamp tab by creating a new content stamp or clicking a content stamp name from the Content Stamp: List page and click the **Stamp** tab.

This page contains the following elements.

Options	Definition
Stamp Type	Select the type of stamp from the list. You can choose Bar Code, Text, or Image. Your selection for this item determines the remaining options on this tab. This table provides information about Bar Code stamps only. For more information on other options, refer to Content Stamp: Text Stamp Tab Options, page 178 or Content Stamp: Image Stamp Tab Options, page 179.
Bar Code Type	Select a bar code type from the list. You can choose INT 25, Code 39, Code 128, DataMatrix, OMR, PDF417, PostNet, Intelligent Mail, or QRCode. Each type has a unique set of options. This table provides information on the PostNet bar code.
Bar Weight	The weight of the bar in points.
Tall Bar Height	The height of the tallest bar.
Short Bar Height	The height of the shortest bar.
Make Human Readable	Select if you want to include human readable text with the bar code.
Font	Select the font type to apply to human readable text from the list. This option is only available if you select the Make Human Readable check box.
Point Size	Type the font size that you want to use for human readable text. This option is only available if you select the Make Human Readable check box.

Options	Definition
POSTNet Type	Select the PostNet type. You can choose ZIP,. ZIP + 4, and DPBC.
Include Modulus 43 Check Character	Select this option to include a check character in the bar code.

Content Stamp: Intelligent Mail Barcode Stamp Tab Options

Intelligent Mail Barcode (IMB) is the next generation of USPS barcode technology. Postal customers can receive discounts when they use Intelligent Mail Barcode. You must register with the USPS to receive a Mailer ID. The Intelligent Mail Barcode is a string consisting of 20, 25, 29, or 31 digits depending on the size of the ZIP code. When defining the data for an intelligent mail barcode, ensure that you enclose the numeric data string in quotes. The following table shows the elements that are required for a valid basic barcode.

Element	Valid Values
Barcode ID	1st digit: 0–9 2nd digit: 0–4
Special Services	Range: 000–999
Mailer ID (obtained from USPS)	Range: 000000–999999
Serial Number	Range: 000000000–999999999
Delivery Point ZIP Code	0, 5, 9, or 11 digit ZIP Code

Note: When invalid digits are incorporated in an Intelligent Mail Barcode (IMB) a fatal error is generated since the data in the barcode is critical.

The full service barcode is required to receive the maximum discounts from USPS. Full service barcodes include the following elements:

- Mailer ID (obtained from USPS)
- A unique ID, guaranteed to be unique for 45 days from the time of posting. The unique ID enables mailers to track a mail piece throughout the postal system to the point of confirmation of delivery to the recipient.
- Other fields are required which include information only available from postal processing systems which include address cleansing (CASS) and postal presort (PAVE) information. In order to fully support the Full Service Barcode, customer data must be passed through, and augmented with this information.

Additional Intelligent Mail Barcodes are required for trays, sacks, and palette labels. Postal reports are required to receive the discounts.

Note: The output order of documents cannot be guaranteed because of xPression's multi-threading. Output order may be significant in some cases, especially if the full service barcode is being

used. If the output order of documents must match input order then Batch Runner should run in single-thread mode.

You can access the Stamp tab by creating a new content stamp or clicking a content stamp name from the Content Stamp: List page and clicking the **Stamp** tab. This page contains the following elements.

Options	Definition
Stamp Type	Select the type of stamp from the list. You can choose Bar Code, Text, or Image. Your selection for this item determines the remaining options on this tab. This table provides information about Bar Code stamps only. For more information on other options, refer to Content Stamp: Text Stamp Tab Options, page 178 or Content Stamp: Image Stamp Tab Options, page 179.
Bar Code Type	Select a bar code type from the list. You can choose INT 25, Code 39, Code 128, DataMatrix, OMR, PDF417, PostNet, Intelligent Mail, or QRCode. Each type has a unique set of options. This table provides information on the Intelligent Mail bar code.
Make Human Readable	Select if you want to include human readable text with the bar code.
Font	Select the font type to apply to human readable text from the list. This option is only available if you select the Make Human Readable check box.
Point Size	Type the font size that you want to use for human readable text. This option is only available if you select the Make Human Readable check box.

Content Stamp: QRCode Stamp Tab Options

A QR (Quick Response) Code bar code is a matrix, or two-dimensional code, that consists of black square dots arranged in a square pattern on a white background, with a finder pattern located at three corners. The QR Code was designed to allow its data to be decoded at high speed.

The QR Code bar code contains information in both the horizontal and vertical axis. This enables a larger amount of raw data to be embedded, as compared to other bar codes. The information encoded in the bar code can be made up of numeric, alphanumeric, or byte/binary data, and can include Unicode characters.

Note: Images can not be encoded in a QR Code bar code.

The amount of data that can be stored in the QR Code bar code depends on the type of data encoded, and the version and error correction level of the bar code. The maximum storage capacities occur for version 40, error correction level L bar codes. The more data that is embedded, the larger the bar code becomes.

The smallest square dot of a QR Code bar code is called a module. The bar weight of a QR Code bar code is the size in points of a single module. The larger the module is, the more stable and easier to read the bar code becomes. However, as the bar code gets larger, a larger printing area is required.

You can access the Stamp tab by creating a new content stamp or clicking a content stamp name from the Content Stamp: List page and clicking the **Stamp** tab.

This page contains the following elements.

Options	Definition
Stamp Type	Select the type of stamp from the list. You can choose Bar Code, Text, or Image. Your selection for this item determines the remaining options on this tab. This table provides information about Bar Code stamps only. For more information on other options, refer to Content Stamp: Text Stamp Tab Options, page 178 or Content Stamp: Image Stamp Tab Options, page 179.
Bar Code Type	Select a bar code type from the list. You can choose INT 25, Code 39, Code 128, DataMatrix, OMR, PDF417, PostNet, Intelligent Mail, or QRCode. Each type has a unique set of options. This table provides information on the QR Code bar code.
Encoding Mode	Select the type of data that you want to encode: • **Byte.** Encodes lowercase letters, text, images, double-byte characters, bindary data and 8–bit values. • **Alphanumeric.** Encodes only numbers and uppercase letters. In this encoding mode, lowercase letters are converted to uppercase. All other data is filtered out. • **Numeric.** Encodes only numbers. All other data will be ignore.
Bar Weight	The weight of the bar code's individual modules in points.
Version	Select the version of the QR Code symbol. The version is the size of the symbol, and ranges from 1 (21 x 21) to 40 (177 x 177). xPression uses the default value of 0 for automatic sizing.
Error Correction Level	Select the level of error correction to be used in the symbol: • **L.** Enables a 7% recovery capacity. • **M.** Enables a 15% recovery capacity. • **Q.** Enables a 25% recovery capacity. • **H.** Enables a 30% recovery capacity. The error correction level enables the verification of data and recovery in the event that part of the bar code is damaged. Increasing the error correction level also increases the bar code size and reduces its data capacity.

Content Stamp: Text Stamp Tab Options

A Text Stamp is a string of text that is added to the document after it has been composed. The options available on the Stamp tab depend on the type of stamp you are creating. You can create text stamps that use multiple lines of text by implementing the <br> tag as a literal or variable value in the Content Stamp: Data Tab Options, page 180. To access the Text stamp options, click the **Stamp** tab. The following options are available for Text Stamps.

Element Name	Description
Stamp Type	Select the content stamp type from the list. Your selection affects the remaining options on this tab. This table describes options that are available for text stamps only.
Text Font	Select the font for the stamp from the list.
Font Size	Type the font size of the stamp. If you need to use more than one font size, you'll need to create additional stamps.
Line Height	Type the line height for the stamp.
Color	Select the color format for the stamp. You can choose RGB or CMYK.
Color Values	Type the color values for each element. If you chose RGB, provide values for Red, Green, and Blue. If you chose CMYK, provide values for Cyan, Magenta, Yellow, and Black.

Text stamps can be used to place paper stock accounting information on separator sheets. For more information, see Paper Stock Accounting, page 158.

Content Stamp: Image Stamp Tab Options

The options available on the Stamp tab depend on the type of stamp you are creating. To access the Image stamp options, click the **Stamp** tab, and select **Image** from the Stamp Type drop-down list. The following options are available for Image Stamps.

Element Name	Description
Width	Type the width of the image, in points.
Height	Type the height of the image, in points.

Page Segments and Overlays

xPression supports Page Segments (.psg) and Overlays (.oly) for AFP output. The new AFP emitter introduced in version 4.5 supports Page Segments and Overlays as Content Stamps. Simply use an Image type content stamp and set the path to your .psg or .oly file. Additionally, both the old and new AFP emitters support Page Segments and Overlays added through the Printer Resident Images feature.

Image Support for Content Stamps

If the image you use in a content stamp is of a format that is not supported by your output type, xPression will attempt to convert the image to a format that is supported. However, it is best to use a format supported by the output type.

Please use the following table to see which image formats are supported for each output type. For more information on image selection, please see the *xPublish Output Processing User Guide*.

Format	PDF	PS	AFP	PCL	HTML
Tiff (Group4)	Y	Y	Y	Y	N
Jpeg (RGB and CMYK)	Y	Y	Y*	N	Y
EPS (Support Transparency) (RGB and CMYK)	N	Y	Y*	N	N
Gif	Y	N	Y	N	Y
PNG	Y	N	N	N	Y
BMP	Y	N	N	N	Y
PDF (native support) (RGB and CMYK)	N	N	N	N	N
TIFF LZW (RGB and CMYK)	N	N	N	N	N
TIFF LZW Transparency (RGB and CMYK)	N	N	N	N	N

* Not supported by all devices

Content Stamp: Data Tab Options

The data tab is where you define the value of your content stamp. You create this value with an expression created in the Expression Editor. The process is the same for any content stamp type. For bar codes and text stamps, the expression that you create here is used to determine what the stamp is. For image stamps, the expression that you create results in a path and file name that identifies the image file to be used for the stamp.

Define stamp data by creating expressions out of Literal Values, Output Variables or Output Functions. Use the expression editor to create your expression. The resultant expression must be of type string.

The data that you want xPression to encode must be defined in the host-native format. If your platform is ASCII-based, you must encode your data in ASCII, and if your platform is EBCDIC-based, your data must be EBCDIC.

If you are creating a 3 of 9 or a Code 128 (Set A) bar code, you can reference non-printable characters in an ASCII position. To encode these characters on an EBCDIC platform, use the table of decimal values located in the *xAdmin Integration Guide*.

The data tab contains important information about your content stamp including the type, the total number of characters, and a preview.

Element Name	Description
Type	Displays the type of stamp. If the stamp is a bar code, the bar code format is indicated here.
Total Number of Characters	This piece of information updates when you construct the data expression.
Preview	The preview displays a representation of the stamp based on your expression, or the path to the image it if is an image stamp.
Entry Edit Box	Displays the data expression for this content stamp. Click the **browse** button to open the Expression Editor and define your data expression. For more information, see Working with the Expression Editor, page 31. A literal is a static, hard-coded number or string that will be placed in the stamp or the path to the image file. A bar code is comprised of "fields." For each data row you add, a field is added to the bar code. If the stamp is a text stamp, you can implement multiple lines of text by using the tag. Simply type as a literal value. See Creating Multiple Line Text Content Stamps, page 181 for more information. If you enter a simple literal value, xPression displays the actual literal value in the preview. If the literal value is a complex expression, the preview may remain empty, or show only part of the expression resolution. This is a limitation of the preview area, and does not indicate an error with the expression. Because the stamp is not yet tied to any particular customer, the preview represents variable parts of the expression with nines.

Reserved Character Combinations

The \x and \P character combinations are reserved and cannot be used by themselves within the literal input field on the Content Stamp Definition page. This only applies if the character combinations are used by themselves. They may be part of a larger value, such as a path. For example, C:\xPression\Pictures will not cause an error.

Creating Multiple Line Text Content Stamps

To create text content stamps that consist of more than one line of text, use the <br> tag to indicate a line break. The <br> tag can be implemented through a literal or variable value, and can reside alone in an expression or in the same expression as another value.

Creating Data Equations

You can create content stamp data or the path to an image based on the results of an equation. You can add, subtract, multiply, divide, or calculate a percentage of any literal, variable, or built-in function. When you add more than one data element to the same data row, you can add a data row operator that defines how one data element relates to the next data element in the row. For a list of supported operators, see Supported Operators, page 182.

Content Stamp Content Expressions

For a list of supported variables that you can use to create your content expressions, see Appendix B, System Function Definitions. For a list of supported operators, see Supported Operators, page 182.

Supported Operators

You can use the following operators in your expressions.

Symbol	Definition	Symbol	Definition
*	Times	!	NOT
/	Divide	=	Equal (string and numeric)
%	Modulous	!=	Not equal (string and numeric)
+	Plus	>	Greater than
-	Minus	<	Less than
(	Open parentheses	>=	Greater than or equal to
)	Close parentheses	<=	Less than or equal to
&&	AND	+	String concatenation
||	OR		

Examples

For an image stamp:

```
"C:\Images\DuplicateWatermark.jpg"
```

Uses the image specified in the file path as the image stamp.

For a bar code stamp:

```
TotalPagesInDocument
```

Includes the total pages in the document in the bar code.

For an OMR bar code stamp:

```
binaryBooleanData(data1) && binaryBooleanData(data2) && binaryBooleanData(data3)
&& binaryBooleanData(data4)
```

Results in a string similar to “1010”, indicating which OMR bars are set and which are not.

For a Text Stamp:

```
City ", " + State + " " ZIP
```

Combines the output variables City, State, and ZIP. The result in this example would be something like:

Carlsbad, CA 92008

See Appendix B, System Function Definitions for a complete list of available functions.

Separator Sheet Definitions

Separator sheets are user defined sheets that are inserted into print streams in order to differentiate groups of physical pages. Separator sheets help ensure that groups of physical pages can be easily identified and managed by human operators. They are created by xPression during the assembly process and are not a component of the input document stream.

You can place image, barcode, and text content stamps on your separator sheets. Additionally, you can use markers with your separator sheets to pull them from a specific paper tray.

Two types of separator sheets can place separator sheets at two levels: Normal separators and Imposition-level separators. Normal separator sheets are associated with an output stream and apply to sheets in the output stream. Imposition-level separator sheets are associated with imposition definitions and apply to the imposed logical pages.

To access separator sheet options, click the **xPublish Output Management** menu, then click **Separator Sheet Definitions**. The Separator Sheet: List page appears. This page displays all separator sheets that exist on your system.

This page contains the following elements.

Element Name	Description
Add Button	Enables you to create a new Separator Sheet definition. For instructions, see Creating a Separator Sheet Definition, page 186.
Copy	To create a duplicate item, select the item you want to copy and click **Copy**. The duplicate item appears in the list with the words “Copy of” placed before the original name.
Delete	To delete an existing item, select the item you want to remove and click **Delete**.
Separator Sheet Name List	To edit the settings of an existing item, click the item name.

Separator Sheets and Your Output Stream

Separator sheets are not part of the normal output stream. They are not intended to be delivered to customers, so they should not be expected to behave as part of a package. Separator sheets are inserted into the stream with the intent that a printer operator will remove them from final output. Content stamps that are placed on separator sheets are associated only with the separator sheets. Content stamps used in your output stream will not appear on your separator sheets because the content stamps are resolved prior to adding separator sheets.

Separator Sheet: General Tab Options

Access the Separator Sheet General tab options by creating a new separator sheet definition or clicking the name of an existing separator sheet definition from the Separator Sheet: List page.

This page contains the following options.

Element Name	Description
Name	Define a name for the separator sheet. The name must be between 1 and 255 alphanumeric characters in length.
Do Not Change Media	If you want to change media when implementing a separator sheet, you must clear the **Do not change media** option. If you do not want to change the media, leave the option selected. If you are changing the media, the Media Information options appear. To change the media, you must use a media marker to signify the change in media. You should set up a media marker for this purpose. See Creating a Marker Definition, page 160 for more information. From the Marker for this Separator list, select the marker you created to signify the change in media.
Marker for this Separator	The marker you select in this list signifies a change in media to support the separator sheet.
Sheet Width	In this box, supply a value for the width of the separator sheet in points. To keep the width the same as the current document, type 0.
Sheet Height	In this box, supply a value for the height of the separator sheet in points. To keep the height the same as the current document, type 0.
Marker for Following Page	The marker you select in this list signifies a change in media from the separator sheet media to the media selection for your document.
Position in Stream	Select this option if you want to place the separator sheet at a pre-defined location. The choice you select in this section may prohibit the separator sheet from being implemented in certain imposition scenarios. Please see the chart in Insert Position, page 185 to view which separator sheet types can be used with each imposition type.

Element Name	Description
On Change of Variable	This option will insert the separator sheet each time there is a change in the selected output variable. For example, if you set up an output variable based on the customer's zip code, xPression will insert a separator sheet each time it encounters a new zip code. The choice you select in this section may prohibit the separator sheet from being implemented in certain imposition scenarios. Please see the chart in Insert Position, page 185 to view which separator sheet types can be used with each imposition type.
On Maximum Page Count	This option tests to determine if the next package exceeds the maximum page count limit as defined here. If the next package exceeds the limit, xPublish outputs a separator sheet before the next package. The choice you select in this section may prohibit the separator sheet from being implemented in certain imposition scenarios. Please see the chart in Insert Position, page 185 to view which separator sheet types can be used with each imposition type.
Within Package Every N Sheets (put value of N)	This option will insert the separator sheet at the interval specified by a number of pages. For example, if you specify 10, the separator sheet will appear in the package every ten pages. Type the number of pages after which you want the separator sheet to appear in the package.
Inclusion Condition	Click the **browse** button to open the Expression Editor, where you can create a data expression that will conditionally include the separator sheet at assembly time if the conditions are met. For more information, see Working with the Expression Editor, page 31.

Insert Position

The choices you make in the Insert Position section can make your separator sheet definition invalid for certain situations. Not all separator sheet definitions can be inserted in any location. The following chart identifies where each separator sheet type can be inserted.

Insert Position	Booklet	N-Up Sequential	N-Up Stacked	Stream
Beginning of Job	√	√	√	√
End of Job	√	√	√	√
Beginning of Partition	√	√	√	√
End of Partition	√	√	√	√
Beginning of Package	√	Not supported	Not supported	√
End of Package	√	Not supported	Not supported	√

Insert Position	Booklet	N-Up Sequential	N-Up Stacked	Stream
Beginning of Stack	Not supported	Not supported	√	Not supported
End of Stack	Not supported	Not supported	√	Not supported
On Change of Variable	√	Not supported	Not supported	√
On Maximum Page Count	Not supported	Not supported	Not supported	√

Separator Sheet: Content Tab Options

The Content tab option page enables you to add content stamps to the separator sheet. To access these options, click the **Content** Tab from the Separator Sheet Definition page. This page contains the following elements.

Element Name	Description
Add	Click this button to add a new content to the separator sheet. You can add as many content stamps as needed.
Move Up	Enables you to move a content stamp higher in the list. To move a content stamp higher in the list, select the content stamp and click Move Up.
Move Down	Enables you to move a content stamp lower in the list. To move a content stamp lower in the list, select the content stamp and click Move Down.
Delete	To delete a content stamp, select the stamp and click Delete.
Content Stamp List	When you click the Add button, a new content stamp row appears in this list. You can then select a content stamp from the provided list .

Creating a Separator Sheet Definition

To create a Separator Sheet definition:

1. Click **Add** from the Separator Sheet List page. The Separator Sheet: General Tab Options, page 184 appear.
2. In the Name box, supply a name for the Separator Sheet. The name must be between 1 and 255 alphanumeric characters in length.
3. If you want to change media when implementing a separator sheet, you must clear the **Do not change media** option. If you do not want to change the media, leave the option selected and skip ahead to step 8.
4. If you are changing the media, the Media Information options appear. To change the media, you must use a media marker to signify the change in media. You should set up a media marker

for this purpose. See Creating a Marker Definition, page 160 for more information. From the "Marker for this Separator" list, select the marker you created to signify the change in media.

5. In the Sheet Width box, supply a value for the width of the separator sheet. To keep the width the same as the current document, type 0.
6. In the Sheet Height box, supply a value for the height of the separator sheet. To keep the height the same as the current document, type 0.
7. From the "Marker for Following Page" list, select a marker to change the media back to the media for your document.

8. In the Insert Position section, you can determine where to place the separator sheet. You can place the separator in your stream at several pre-defined locations by using the “Position in Stream” option. You can place the separator in your stream at the position where a selected variable value changes by using the “On Change of Variable” option. You can place the separator in your stream at a specified page count by using the “On Maximum Page Count” option. Or you can place the separator in your stream at specific intervals determined by a number of pages.
9. Click the **browse** button to open the Expression Editor where you can define an inclusion condition to include or exclude the separator sheet based on criteria that you define. For more information, see Working with the Expression Editor, page 31.
10. To add content stamps to your separator sheet, click the Content tab and add the necessary content stamps to your list. See Separator Sheet: Content Tab Options, page 186 for more information.

For more information on all of these options, see Creating a Separator Sheet Definition, page 186.

Imposition Definitions

xPublish supports multiple imposition which places multiple logical pages on a single sheet. xPublish supports three types of multiple imposition: 2 Up Booklet Imposition, N Up Sequential Imposition, and N Up Stacked Imposition. Imposition can be defined and produced for PDF, PostScript, and AFP.

Note: (1) The PDF Bookmarks feature is not supported for documents that use imposition. (2) Using variables in file names, comments, and AFP TLE and NOP entries is not supported when using imposition in the output. (3) The stream definition Reverse Printing option is not supported for documents that use imposition (for more information, see Stream Definition General Tab Options, page 235).

2 Up Booklet Imposition

2 up booklet imposition produces “saddle stitched” booklets

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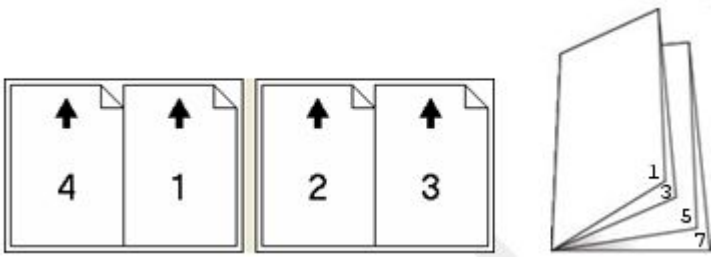
The term "saddle stitching" means securing the pages of a book or booklet by means of wire staples through the centerfold. In saddle stitched work, the printed sections are inserted one inside the other. For example, if you are creating a four-page booklet, the pages will appear in sequential order while you are creating or editing the document. When the document is sent to the printer, page four is placed on the same sheet as page one and page two is placed on the same sheet as page three. When the sheets are put-together and folded, the page order is correct.

This shows a 4 page duplex signature created for saddle stitched booklets



For 2 up booklet imposition, you must define the horizontal gutter size, specify “Duplex” plex mode, and you have the option to activate shingling. Shingling applies creep to the pages to compensate for paper thickness when folded.

Note: (1) Bleeding is applied to all sides except the gutter side at the crop mark offset. (2) The gutter side is clipped to the smaller of the crop mark offset, or 1/2 of the gutter width.

You also have the option to specify where in the booklet inserted blank pages are placed. The number of pages in a 2up imposition booklet is always divisible by 4, but it may not be known in advance how many pages are in the booklet, and blank pages are added to make the number of pages divisible by 4. Specifying where the blank pages are placed enables you to ensure, for example, that a blank page is always on the back cover and another blank page is always on the inside back cover.

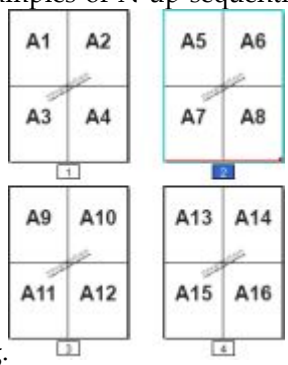
See Imposition Definitions: 2 Up Booklet Options, page 191 for more information.

N Up Sequential Imposition

N Up Sequential Imposition enables multiple logical pages to be printed on a physical sheet. Pages appear from first to last in sequential order. After printing, the sheets are cut and assembled sequentially, but the order of the pages will be jumbled. This imposition is used when you don’t care what order the output is in.

For N up sequential imposition, you must specify the number of columns and rows, and the horizontal and vertical gutter size.

Two examples of N up sequential imposition that uses Duplex and Simplex mode printing.

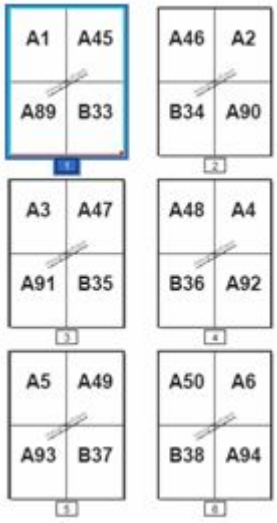


See Imposition Definitions: N Up Sequential Options, page 192 for more information.

N Up Stacked Imposition

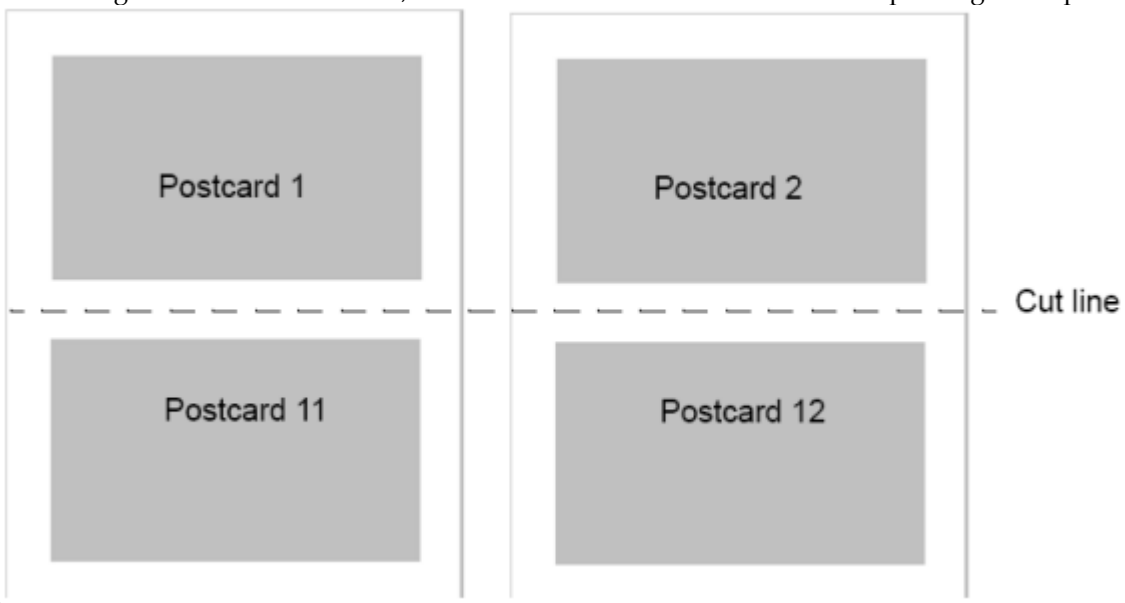
N Up Stacked Imposition enables you to specify the height of the stack. This enables the final sheets to be divided into stacks, cut, and then reassembled into the original order specified.

This illustration shows an example of N Up Stacked imposition using 8 logical pages on a sheet, duplex mode, with a stack height of 22 for a total of 44 physical pages or 176 logical pages.



By setting the stack height, xPression knows how many sheets will be cut at one time and can order the pages accordingly. For example, if your paper cutter can only cut 10 sheets of paper at once, you define

a stack height of 10. In this scenario, the first two sheets would look like this if printing in Simplex mode



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When you cut the stack in half, the top stack will have postcards 1-10 and the bottom stack will have postcards 11-20. If you place the top half of the stack into the postal tray first, then put the bottom half in the tray after it, the postcards will be ordered 1-20.

This method is the only way to support N Up while maintaining the order of the documents within the output. See Imposition Definitions: N Up Stacked Options, page 192 for more information.

Imposition Definitions: 2 Up Booklet Options

The 2 up booklet options are available on the Imposition Definitions General tab. This page contains the following options.

Element Name	Description
Name	Supply a name for the imposition definition. The name must be between 1 and 255 alphanumeric characters in length.
Description	Supply a description for the imposition.
Imposition Type	This list enables you to select your imposition type. For 2 up booklet imposition, select **2 Up Booklet**.
Gutter Horizontal (Points)	Define the horizontal gutter size in points.
Shingling	Shingling applies creep to the pages to compensate for paper thickness when folded. To activate shingling select On. To disable shingling, select Off.
Width (Points)	Define the width of the sheet in points.
Height (Points)	Define the height of the sheet in points.
Thickness (mms)	Define the thickness of the sheet in millimeters.

Element Name	Description
Insert Needed Blank Pages	Define where blank pages should be inserted: • **At end.** Places needed blank pages at the end of the booklet. There is no back cover or inside back cover with this option. • **Before last page.** Places any needed blank pages ahead of the last page, so that the last page is always the back cover of the booklet. • **Before last two pages.** Places any needed blank pages ahead of the next to last page, so that the last page is the back cover and the next to last page is the inside back cover.
Orientation	Choose the orientation of the sheet. You can choose Landscape or Portrait.

Imposition Definitions: N Up Sequential Options

The N up sequential options are available on the Imposition Definitions General tab. This page contains the following options.

Element Name	Description
Name	Supply a name for the imposition definition. The name must be between 1 and 255 alphanumeric characters in length.
Description	Supply a description for the imposition.
Imposition Type	This list enables you to select your imposition type. For N up sequential imposition, select **N Up Sequential**.
Columns	Define the number of columns that will appear on each sheet.
Rows	Define the number of rows that will appear on each sheet.
Gutter Horizontal (Points)	Define the horizontal gutter size in points.
Gutter Vertical (Points)	Define the vertical gutter size in points.
Width (Points)	Define the width of the sheet in points.
Height (Points)	Define the height of the sheet in points.
Thickness (mms)	Define the thickness of the sheet in millimeters.
Orientation	Choose the orientation of the sheet. You can choose Landscape or Portrait.

Imposition Definitions: N Up Stacked Options

The N up stacked options are available on the Imposition Definitions General tab. This page contains the following options.

Element Name	Description
Name	Supply a name for the imposition definition. The name must be between 1 and 255 alphanumeric characters in length.
Description	Supply a description for the imposition.
Imposition Type	This list enables you to select your imposition type. For N up sequential imposition, select **N Up Sequential**.
Columns	Define the number of columns that will appear on each sheet.
Rows	Define the number of rows that will appear on each sheet.
Gutter Horizontal (Points)	Define the horizontal gutter size in points.
Gutter Vertical (Points)	Define the vertical gutter size in points.
Stack Height	The output sheets are divided into stacks, cut, and reassembled in their original order. Specify the height of the stack in number of sheets. This value cannot be left blank, but it can be set to 0. If set to 0, xPublish will create one stack (one partition).
Generate Temporary File	By default this option is set to “Off”. At the default setting, xPublish will process the document in memory before sending it to the emitter for publishing. If your document contains a large number of stacks and each stack includes a large document, you may run into performance problems. When this option is set to “On”, xPublish will output the document to the disk, then retrieve the stacks from the disk and send them to the emitter one at a time.
Width (Points)	Define the width of the sheet in points.
Height (Points)	Define the height of the sheet in points.
Thickness (mms)	Define the thickness of the sheet in millimeters.
Orientation	Choose the orientation of the sheet. You can choose Landscape or Portrait.

Imposition Definitions: Marker Tab

The Marker tab lists all of the markers defined on your system. From this page you can select markers to apply to your imposed sheets. Markers may be required to invoke device specific features on the imposed sheets. You can access these options by clicking the **Marker** tab from the Imposition Definition page. To apply a marker to your imposition definition, select the marker and click **Save**.

Imposition Definitions: Content Stamp

The Content Stamp tab enables you to apply content stamps to your imposition sheets. Content Stamps are processed in the top-down order displayed on this page. It is important to place your content stamps in the correct order if you are overlaying one stamp over another, for example, overlaying a text stamp over an image stamp. You can access these options by clicking the **Content Stamp** tab from the Imposition Definition page.

To apply content stamps to your imposition definition, click the **Add** button to add a new row to the table. Each row that you add to the table will contain a list of all content stamps that exist on your system. Select the content stamp you want to use from each list. If you need to rearrange the content stamp order, select the stamp you want to move and click **Move Up** or **Move Down**. When you are finished, click **Save**.

Note: During output processing, xPression processes content stamps before imposition. If you want to use content stamps to get the number of sheets in a booklet imposition, use system functions in the content stamp, such as CurrentBookletSheetInPackage. For more information about system functions, see Appendix B, System Function Definitions.

Imposition Definitions: Separator Sheets

The Separator Sheet tab lists all of the separator sheets defined on your system. From this page you can select separator sheets to apply to your imposed sheets. You can access these options by clicking the **Separator Sheet** tab from the Imposition Definition page. To apply a separator sheet to your imposition definition, select the separator sheet and click **Save**.

Postal Processing Definitions

Postal processing is performed in the US and other countries in order to reduce the cost of postage, and to speed delivery. By delivering mail to the postal service in a specific fashion, the postal service has to perform less processing of the mail, and can save time and money. They, in turn, pass this savings on by reducing the cost of postage for the pieces.

Mailings that are postal service ready will have the following characteristics:

- Mail pieces will have correct addresses, and possible barcodes that can be read by postal equipment. There are strict rules on placement and size of all marks on mail pieces and the dimensions of mail pieces.
- Mail pieces may be output in a new order depending on the postal features used. Also, Satori return values can be used to partition output into different files for different trays, output can be delineated with xPression separator sheets, or the output can be just simply output.
- Postal reports must accompany the mail as it is entered into the postal system. The reports must conform to very specific formats. Postal processing software typically generates the reports needed for the post office.

xPression's role in this process to assist preparers of mail by allowing seamless integration into a complex and multi-step computer-automated and physical-handling process. Postal processing definitions are included in an output stream definition. For more information, see Output Stream Postal Processing Tab Options, page 242.

Postal processing occurs after the any inclusion conditions are processed; therefore, streams can be filtered by weight of package or paper thickness, or any other criteria.

Currently, xPression supports Satori Software's MailRoom ToolKit® volume mailing preparation software through an interface provided by Satori. You can also interface with any postal processing software that supports "command line" operation, and comma delimited input and output files.

Caution: When an Output Profile uses more than one Output Stream configured for Postal Processing, ensure that each stream uses a separate Postal Processing definitions. If two streams are configured to use the same Postal Processing definition, they will both use the same input and output from the postal processing system. This means that the streams will incorrectly read information from both streams, causing unpredictable results.

Postal Processing Definition: List Options

To access the Postal Processing Definitions list, click the **xPublish Output Management** menu and click **Postal Processing Definitions**. This page contains the following elements.

Element Name	Description
Add Button	Enables you to create a new postal processing definition.
Copy	To create a duplicate item, select the item you want to copy and click **Copy**. The duplicate item appears in the list with the words "Copy of" placed before the original name.
Delete	To delete an existing item, select the item you want to remove and click **Delete**.
Postal Processing Definition Name List	To edit the settings of an existing item, click the item name.

Creating a Satori Postal Processing Definition

xPression interfaces seamlessly, through the Satori-provided interface, with the Satori postal processing software using a Satori postal processing definition.

Note: In order to use a Satori postal processing definition, you must have Satori Software's MailRoom ToolKit® volume mailing preparation software installed.

To create a Satori postal processing definition:

1. Click the **xPublish Output Management** menu and click **Postal Processing Definitions**.
2. Click **Add**. The Postal Processing Definitions: Add a New Definition page appears.
3. Type a name for the definition, and optionally, a description.
4. Select **Satori** from the Postal Software drop-down list.
5. Select the country for which this postal processing definition is being created: **United States of America**, **Canada**, or **United Kingdom**.
6. (United States of America only) Select the case that you want to use for the addresses in the output: **Upper**, **Lower**, or **Mixed**. This option is not available if you selected Canada or United Kingdom for the country.

7. Type the name or IP address of the server that contains the Satori software, and the port.
8. (United States of America only) Select the **Address Correction Only** check box to only apply address correction to the postal information, and not perform any postal sorting on the output. If you select this check box, the Template field will be unavailable, and nothing will be sent to the Satori server. This option is not available if you selected Canada or United Kingdom for the country.
9. Type the name of the Satori template that you will be using to define the sort options for this definition, ensuring that you match the name (including case) exactly as defined on the Satori server. Templates are created in the Satori software, and require knowledge of postal processes as well at the Satori software to create.

   If you selected United States of America, and selected the Address Correction Only check box, this field will be unavailable.
10. If you encounter problems, select the **Generate debug log** check box to create a log file containing information that will help Satori debug any issues you are having with the Satori software. The log file is stored in the xPression temp directory.
11. Click the **Output to Satori** tab and define the document attribute values that should be output to Satori, and the Satori field that value should correspond to:
    - Click **Add**. A new line appears in the table.
    - Select the document attribute from the drop-down list. The list contains all the output variables defined in xAdmin, as well as the supported system functions. If the corresponding Satori field doesn't require a value, select **None**.
    - Select the corresponding Satori field from the drop-down list.
    - Repeat the previous steps to add more items. You can also select an item and use the Move Up and Move Down buttons to reorder the items in the list.
12. Click the **Input from Satori** tab and define the fields that should be input to xPression from Satori, and to what document attribute they should be assigned:
    - Click **Add**. A new line appears in the table.
    - Select the Satori field from the drop-down list.
    - Select the corresponding document attribute from the drop-down list. The list contains all the output variables defined in xAdmin. These output variables do not need to be assigned to a data source. You can overwrite variables in the document that were output to Satori, or you can select new ones here, which enables you to keep the original and cleansed address.
    - Repeat the previous steps to add more items. You can also select an item and use the Move Up and Move Down buttons to reorder the items in the list.

    These fields can be used on content stamps, which are placed after postal processing completes, to output such things as address window content, and postal bar codes. Select the corresponding output variable as the data for the content stamp.

13. Click the **Reports** tab. Select the printer from the drop-down list that you want to use to print the reports, then select the reports to print:
    - Click **Add**. A new line appears in the table.
    - Select the desired report from the drop-down list.
    - Repeat the previous steps to add more reports. You can also select a report and use the Move Up and Move Down buttons to reorder the items in the list. You can't have more than one of the same report in the list.
14. Click the **Mailer** tab. If this is the first visit to this tab, it will be blank. You can save default information to populate this tab for every Satori postal processing definition you create. The fields that appear on this differ depending on the country selected for this definition. Enter the following information, or edit it, if necessary:
    - **United States of America:** Type the postal list name, company name, address, city, state, and zip code.

      Canada: Type the company address, name, customer ID, postal list name, zip code and telephone number.

      United Kingdom: Type the company address, name, and zip code.
    - Type the Satori Software registration key. This information is the same for each Satori definition. If it is updated here, it will update in every definition.

    Click **Save** on the Mailer tab to save the information to this definition only, or click **Save As Default** to save this information as the default. Every Satori definition that currently exists will be updated with the default information, and the default information will appear on this tab for each new Satori definition created.
15. Click **Save** to save the postal processing definition and return to the Postal Processing Definitions: List page.

For more information or support on the Satori interface, contact Satori Software at 800–553–6477, or sales@satorisoftware.com.

Creating a Generic Postal Processing Definition

xPression enables you to interface with any postal processing software that supports "command line" operation, and also supports comma delimited input and output files.

To interface with the postal processing software from xPression, you must have a script file. Refer to your postal processing software documentation or vendor for information about how to run a postal sort and cleanse from the command line, with comma delimited input and output files.

To create a generic postal processing definition:

1. Click the **xPublish Output Management** menu and click **Postal Processing Definitions**.
2. Click **Add**. The Postal Processing Definitions: Add a New Definition page appears.
3. Type a name for the definition, and optionally, a description.
4. Select **Generic** from the Postal Software drop-down list.
5. Type the path to the script file that you will use to interface with the software.

6. Click the **Output** tab. Type the location to which you want to write the output file, and then define the document attribute values that should be output to the file:
   - Click **Add**. A new line appears in the table.
   - Select the document attribute from the drop-down list. The list contains all the output variables defined in xAdmin, as well as the supported system functions.

     A hard-coded attribute called PackageIDField must be selected as one of the attributes for both output and input. This attribute is the ID of the package of documents, and enables xPression to identify the document package in the new sort order.
   - Repeat the previous steps to add more items. You can also select an item and use the Move Up and Move Down buttons to reorder the items in the list.
7. Click the **Input** tab. Type the location from which you want to read the input file, and then define the document attributes that should be read:
   - Click **Add**. A new line appears in the table.
   - Select the document attribute from the drop-down list. The list contains all the output variables defined in xAdmin. These output variables do not need to be assigned to a data source. You can overwrite variables in the document that were output, or you can select new ones here, which enables you to keep the original and cleansed address.

     A hard-coded attribute called PackageIDField must be selected as one of the attributes for both input and output. This attribute is the ID of the package of documents, and enables xPression to identify the document package in the new sort order.
   - Repeat the previous steps to add more items. You can also select an item and use the Move Up and Move Down buttons to reorder the items in the list.

   These values can be used on content stamps, which are placed after postal processing completes, to output such things as address window content, and postal bar codes. Select the corresponding output variable as the data for the content stamp.
8. Click **Save** to save the postal processing definition and return to the Postal Processing Definitions: List page.

Output Definitions

Output definitions specify settings for a specific output format that you can associate with an existing output device. xPression comes with four hard-coded output definitions that cannot be customized or altered, these default definitions are: HTML, Packed MSOHTML, PDF, and Web Archive. These default definitions do not appear in the output definition list, but they are available when constructing your output profiles.

You can create customized output definitions for the following output formats: AFP, PostScript, PCL, Text, PDF, TIFF, PPML, and No Output. All output formats appear in the output definition list for output profiles. See Output Profiles, page 264 for more information. Output definitions are a required element for output profiles.

The following table contains a list of all output formats and how they are used.

Output Format	Description
AFP	From version 4.5, xPression introduces a new, more robust AFP emitter. The old AFP emitter (4.2 AFP) is still supported in this version. The old emitter does not support any new features from 4.5. Both emitters can exist at the same time. xPression does not create a default AFP output definition. You must create an output definition for each of your AFP printers. To create an AFP output definition, see Creating AFP Output Definitions, page 205. For more information about AFP support in xPression, see the *xPublish Output Processing Guide*
DOCX	xPression automatically creates this output definition and does not allow you to create a new DOCX output definition, or edit the default DOCX output definition. This output definition does not appear on the Output Definitions page, but does appear in the Output Definition drop-down list on the Publish Profile Detail dialog box.There are some document limitations to consider when producing DOCX output, for more information, see DOCX Output Limitations, page 201.
HTML	HTML Output definitions enable you to create HTML output for use in creating E-mail communications and HTML website content. Prior to xPression 4.5, you cannot create new HTML Output Definitions. xAdmin used a built-in HTML Output Definition to handle HTML output in your Output Profile. This built-in Output Definition will now appear in your Output Definition list under the name “HTML”. You can now configure the built-in Output Definition. For more information, see Creating HTML Output Definitions, page 222.
No Output	xPression does not create a default NoOutput output definition. NoOutput output definitions enable you to run a job and gather information about the job (metadata) without producing any output. See Creating “No Output” Output Definitions, page 230 for more information.
Packed MSOHTML	xPression automatically creates this output definition and does not allow you to create a new MSOHTML output definition or edit the default MSOHTML output definition. This output definition is mainly used in Web Services to return an image to the browser for viewing. This output definition does not appear on the Output Definitions page.
PCL	xPression does not create a default PCL output definition. You must create an output definition for each of your PCL printers. To create a PCL output definition, see Creating PCL Output Definitions, page 211.

Output Format	Description
PDF	xPression automatically creates this output definition; however, you can edit it. Use the default PDF output definition when you are printing a PDF to a file and don't want to place any encryption on the file. You can create new PDF output definitions. The new definitions should be used when you are printing a PDF to a file and you want to: • place encryption on the file • apply permissions • define document information (such as title and creation date) • set up default viewer preferences See PDF Output Definitions, page 215 for more information.
PostScript	xPression does not create a default PostScript output definition. You must create an output definition for each of your PostScript printers. To create a PostScript output definition, see Creating PostScript Output Definitions, page 210.
PPML	PPML output enables printers to manage variable data by sending all the data to the printer at once, making for much faster printing. xPression does not create a default PPML output definition. You must create an output definition for PPML output. To create a PPML output definition, see Creating PPML Output Definitions, page 230
Text	A Text output definition produces output to text-only devices such as text files, plain text emails, Short Message Service (SMS) devices, and reports. See Creating Text Output Definitions, page 212 for more information.
TIFF	TIFF output definitions enable you to send your output to archive systems, fax servers, and other electronic systems as an image file. xPression uses the TIFF format for the output image because TIFF provides the highest quality image and also supports compression. xPression can produce these images at various bit depths and with various compression methods. See Creating TIFF Output Definitions, page 221 for more information.
Web Archive	xPression automatically creates this output definition and does not allow you to create a new output definition for Web Archive. Use this output definition when you want to produce the document as an attachment to an e-mail.

AFP Foreign Language Support

The AFP emitter provides the ability to convert TrueType fonts into AFP Outline or bitmap fonts to better support foreign languages. During the outline font conversion process, the AFP emitter creates custom code pages in order to support the required Unicode characters in a reduced AFP Outline font.

When converting to outline fonts, in order for bold or italic to be supported, you must start with a bold or italic TrueType font. For example, to get a bold outline font, you can use arialbd.ttf (Arial Bold), or to get an italic outline font, you can use ariali.ttf (Arial Italic). Bitmap fonts don't have this limitation, they can simulate bold and italic styles from normal fonts.

The following languages are now supported for AFP output:

- Traditional Chinese
- Korean
- Vietnamese
- Tagalog
- Japanese

Note: Some English characters can not be output in AFP when using the MingLiu (mingliu.ttc) font. This is a limitation of JDK versions jdk16_18 and jrockit_160_17_R28.0.0–679. To avoid this issue, ensure that you are using jdk1.6.0_20, jdk1.5.0_14, or jrockit_160_14_R27.6.5-32. Additionally, the outline conversion of Mingliu is not currently supported well; it is recommended that you use a bitmap conversion with this font.

Resampling Images to Output Resolution

When you use the "Resample Images to Output Resolution" option, please keep in mind the following information:

- This option supports BMP, GIF, PNG, and JPG image formats. All other formats are ignored.
- PNG transparency is maintained.
- This feature is not supported for PCL output.

The Resample Images to Output Resolution option does not support the CMYK JPG image format. Resampling CMYK images may cause undesirable results in the output for those images. To ensure consistent color, either save the images as RGB images, or do not select Resample Images to Output Resolution on the output definition.

DOCX Output Limitations

xPression supports output in the Microsoft Office Docx format. A standard Docx output definition is provided in addition to the existing formats. The standard Docx output definition cannot be deleted or altered, so it does not appear on the Output Definition page of Publish Output Management in xAdmin. The Docx output definition is selected from the Output Definition list of the selected output profile.

Docx output is supported for xDesign and xPresso for Word packages only. It can be published through xResponse, xRevise, batch or Web Services. It can also be published through a Return to Calling Application Distribution Definition. However, batch does not support Return to Calling Application.

Because of the nature of DOCX output, there are some limitations to what can be supported in documents being output with a DOCX output definition. The following sections describe these limitations.

- Performance, page 202
- Microsoft Word Features, page 202
- Output Processing Features, page 202
- Universal Content, page 203
- Indexes and Tables of Content, page 203
- Advanced Publish Formatting Options, page 203
- Tables in DOCX Output , page 204
- Subtotals, page 204
- Styles, page 204

Performance

DOCX Universal Content items require more processing than other output formats. The xPression publishing process will take longer when DOCX is the Universal Content format.

Microsoft Word Features

xPression does not support populating Microsoft Word Content Details with DOCX output.

Output Processing Features

The following output processing features are supported for DOCX output:

- Recipient Processing
- Metadata
- Packaging (Individual package only)
- Partition only “individual print file for each customer” is supported)

The following output processing features are not supported for DOCX output:

- Content Stamps
- Imposition
- Crop Marks
- Sorting
- Grouping
- Markers

- Separator Sheets
- Inclusion Conditions
- Postal Processing
- Duplex Printing

Universal Content

DOCX output has the following limitations involving Universal Content:

- The only supported option for universal content table of contents is the Follow Master option. This is a limitation of Microsoft Word and how it generates tables of content.
- The Page Numbering option is not supported.
- PDF, TIFF, and InDesign package type universal content will be converted to an image, and then added to the DOCX output.
- Intermediate DOCX output created by xPression using a Return to Calling Application Distribution Definition cannot be used as Universal Content. To work around this issue, you must open the document in Microsoft Word and use "Save As" to save it as a different DOCX file. After re-saving, the DOCX document can be used as Universal Content.

Indexes and Tables of Content

Index headings and index heading variables in documents output to the DOCX format are not supported. Since DOCX output is flow-based, with no page information, index heading and index heading variable content can't be obtained and output.

To get the correct page numbers and entries from other content items it is necessary to manually update the Table of Content and Index fields in the published DOCX output. The default style is used after the Table of Contents and indexes are updated.

Advanced Publish Formatting Options

The xPression Publish publishing engine supports advanced formatting options that are enhancements to existing Microsoft Word features. Not all of these options are supported in DOCX output because they are not supported in Word.

The following xPression Publish features are supported:

- **Define table heading rows.** Supported only if this options is defined for the first row of the table. Microsoft Word 2007 doesn't support a row other than the first to be identified as a heading row.
- **Paragraph widows and orphans.** Supported only as true/false. The "number of lines" functionality is not supported.

The following xPression Publish features are not supported:

- **Keep table rows together.** This feature is not currently supported.
- **Define table footer rows.** This feature is not supported because Microsoft Word doesn't contain a similar feature.
- **Set table continuation text.** Both "continue from previous page" and "continue to next page" are not supported because Microsoft Word doesn't have these features.
- **Table row widows and orphans.** These features are not supported because Microsoft Word doesn't contain similar features.
- **Turn off table continuation text.** This feature is not supported because Microsoft Word doesn't contain a similar feature.

Tables in DOCX Output

Please see the following two issues about tables in DOCX output:

- Microsoft Word automatically merges consecutive tables. This is not always desired, so to ensure that separate tables are output as designed xPression places an empty, hidden paragraph between consecutive tables during process so that they are not merged automatically. This paragraph will appear only if Hidden Text is displayed. Otherwise output will appear as designed.
- When using a table that breaks across a page boundary, your DOCX output may appear different than what you would expect to see in Microsoft Word. Microsoft Word adds a bottom border to the last row before the page break. In your output, the bottom border will be missing.

Subtotals

The subtotal feature available in the xPression design tools is not supported in DOCX output, and will be ignored.

Styles

For DOCX output, the output file will not retain the style name of any styles used to create the document.

Output Definition: List Options

To access the Output Definitions list, click the **xPublish Output Management** menu and click **Output Definitions**. This page contains the following elements.

Element Name	Description
Add Button	Enables you to create a new output definition.
Copy	To create a duplicate item, select the item you want to copy and click **Copy**. The duplicate item appears in the list with the words "Copy of" placed before the original name.
Delete	To delete an existing item, select the item you want to remove and click **Delete**.
Output Definition Name List	To edit the settings of an existing item, click the item name.

Creating AFP Output Definitions

With version 4.5, xPression introduces a new, more robust AFP emitter. The old AFP (4.2 AFP) emitter is still supported in this version. To enable the new or old AFP emitter, use the EnableOldAFPEmitter property located in the xPressionPublish.properties file.

Before using AFP Output Definitions, see AFP Printer Definitions, page 150 for more information about AFP image handling. Also, please see the *xPublish Output Processing Guide* for more information about the AFP emitter.

To create an AFP output definition:

1. From the Output Definition list, click **Add**.
2. In the Name box, provide a name for the output definition. The name must be between 1 and 255 characters in length.
3. In the Format box, select **AFP**. The AFP options appear.
4. Some printers are only able to support a specific resolution. If your document contains images of a higher resolution than your printer can support, the printer will still print the images at the lower resolution. In this case, the higher resolution images are making your file size unnecessarily large. Use the **Resample Images to Output Resolution** option to enable xPression to resample your images to the resolution setting defined in your Printer Definition.
5. In the Select a printer for the output list, select the appropriate output printer from the drop-down list. This list is populated by the devices you have defined in the printer definition page.
6. Select the **Convert all images to black and white** check box to enable a black and white conversion, then select your black and white image conversion option:
   - **Diffusion Dither.** Converts the image by using an error-diffusion process. The conversion starts at the pixel in the upper left corner of the image. If the pixel's value is above middle gray (128), the pixel is changed to white; if the value is below, the pixel is changed to black. Since the original pixel is not usually pure white or pure black, error is inevitably introduced. This

error is transferred to the surrounding pixels and diffused throughout the image, resulting in a grainy, film-like texture.

- **50% Threshold.** Converts pixels to white and black, depending on their gray values. Gray values above the middle gray level (128) are converted to white and pixels with gray values below that level are converted to black. The resulting image is a very high-contrast, black-and-white representation of the original image.

7. In the Fonts section, define how you want to xPression to process fonts:
   - **TrueType to AFP Outline Font.** Automatically converts TrueType fonts to AFP outline fonts, if the following conditions are met:
     — The AFP codepage is in the AFPFontCache folder.
     — The TrueType font is in the expected location.
     — The font is not associated with an AFP outline font in the dcpi.properties (in the FontMapping key) file and not mapped with xAdmin's Font Utility.

     If you select this option, you must specify the default code page for use with the converted AFP outline fonts. This option has the same effect as the "Default CodePage" option that was used in previous versions of xPression. Do not use this option with foreign languages.
   - **TrueType to AFP Subset Font.** Enables support for extended non-Latin characters that occur in foreign languages. Select one of the following formats, depending on what your destination printer supports: **Outline**, **Bitmap:300DPI**, **Bitmap:240DPI** (for older-style printers).

     For more information, see AFP Foreign Language Support, page 200.
   - **Embedded TrueType.** Embeds the fonts contained in the document in TrueType format unless TrueType fonts are not mapped to AFP outline fonts in dcpi.properties or with xAdmin's Font Utility. This option has the same effect as the "Embed fonts in TrueType Format" option that was used in previous versions of xPression. Do not use this option with foreign languages.
8. The "Use Dither Pattern Shading" option enables black and white printers to simulate gray scale printing. Select if needed.
9. Specify the black and white threshold percentages (0 to 100) for use when converting RGB images, rules, or shading to black and white. When the values of Red, Green, and Blue are less than the value you specify for the black threshold, the color will be converted to black. When the Red, Green, and Blue values are greater than the value you specify for the white threshold, the color will be converted to white. If these options are left blank, RGB values less than 0.1 (10% of 255) will be converted to black, and values greater than .08 (80% of 255) will be converted to white. These options can be used alone, or along with the CMYK options. For more information, see Black and White Threshold Examples, page 207.
10. Specify the black and white threshold percentages (0 to 100) for use when converting CMYK images, rules, or shading to black and white. When the K (black) value is greater than the value you specify for the black threshold, the color will be converted to black. When the K value is less than the value you specify for the white threshold, the color will be converted to white. If these options are left blank, K values less than 0.01 (1%) will be converted to white, and K values greater than .75 (75%) will be converted to black. These options can be used alone, or along with the RGB options. For more information, see Black and White Threshold Examples, page 207.
11. If you are storing fonts on your printer and therefore do not need to embed fonts in your output file, you can define those fonts in the Not Embed Font List. For all fonts defined in this table,

xPression will not embed the fonts in the output file. For instructions on adding fonts to the Not Embed Font List, see The Do Not Embed Font List, page 231.

12. The TLE Items list enables you to define the name of a TLE, the TLE level, and the TLE value. To apply these TLEs to your documents, simply publish the document with a stream that uses the output definition that contains your TLE settings. If you want to define different TLE values or publish the same document without TLEs, you will need to create separate output definitions for each scenario. To build your TLE items, see Building TLE Items, page 209.
13. The Comments list enables you to specify comments that you want included in the output file. Comments are ignored by the printer. Select the desired level and position for the comment. The level can be Document, Package, or Partition, and the position can be either the beginning or end of the selected level. Multiple entries for the same level can be selected. For more information, see Adding Comments to Your Output File, page 232.
14. Click **Save** when finished.

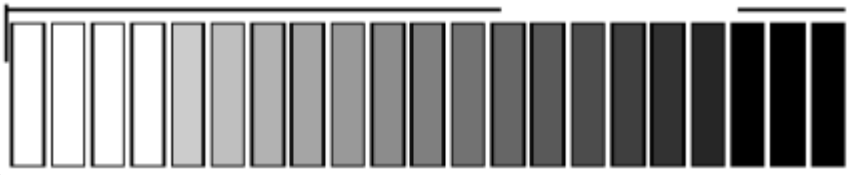
Note: Limitation with CMYK Images: Embedded ICC color profiles are not supported for CMYK images that are resampled to device resolution. Resampling images with embedded ICC color profiles may cause undesirable results in the output for those images. To ensure consistent color, either save images without embedded ICC color profiles or do not select Resample Images to Output Resolution in the Output Definition.

Black and White Threshold Examples

The black and white threshold settings apply to images, as well as rules (lines or borders) and shading in AFP output.

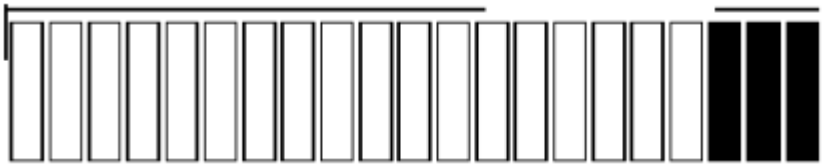
The following images illustrate how the RGB settings effect output. CMYK settings are similar, but only the K value is used. Note that some variation in printer output can be expected depending on the equipment used, so the desired setting for a given environment will vary accordingly. The values provide here are for comparison.

This scale shows output with the default RGB thresholds for black and white



.

This scale shows output with the black threshold at default and the white threshold at 95%. Notice that the point where the color is entirely white is much farther to the left.

With the white threshold at 10% most of the scale is white. 

This scale was produced with the black threshold set to 45% and the white threshold set to 50%. Note that the only gray is the single patch near the center of the scale.

These examples were achieved mainly by manipulating the white threshold, except for the last one. Similar effects can be achieved by manipulating the black threshold. If the values overlap, 60% black and 40% white for example, xPression will attempt to split the overlap, but the effect is unpredictable so overlapping values are not recommended.

Archiving AFP Output in Documentum

The Documentum Content Server only archives formats that are recognized by the server. By default, AFP is not recognized. To archive AFP output, you must create a format object for AFP in the repository. Please see your Documentum documentation for instructions on creating Documentum Format Objects for file formats.

Ensuring Proper Orientation

Under certain circumstances the page orientation, portrait or landscape, in AFP output can be incorrect. To resolve this, you can use a group of properties in the dcpi.properties file. Set the appropriate property as TRUE to achieve the desired orientation. For more information on the dcpi.properties file, see *Administering the xPression Server*.

`AFPMDDReverseDimsIfWider`
Reverses the dimensions of the x and y axes in the MDD command if the page is wider than tall.

`AFPMDDReverseDimsIfTaller`

Reverses the dimensions of the x and y axes in the MDD command if the page is taller than wide.

`AFPMDDSetLandscapeIfWider`

Sets the orientation of MDD command to landscape (1) if the page is wider than it is tall. Otherwise, leaves it as portrait (0)

`AFPMDDSetLandscapeIfTaller`

Sets the orientation of MDD command to landscape (1) if the page is taller than it is wide. Otherwise, leaves it as portrait (0)

Building TLE Items

You can build your TLE Items using Literal values, Variable values, and built-in Functions.

To build a TLE:

1. Click **Add**. A new row appears in the table.
2. Type a name for the TLE.
3. Select the level for the TLE: **`document`**, **`delimited`**, **`package`**, **`partition`**, or **`page`**. For more information on the Delimited option, see Delimited TLE Items, page 209.
4. Define the content of the TLE. If you are using a literal value, simply type the value. If you want to use a variable or function, click the browse button to open the Expression Editor. You can use the TotalPagesInPackage and CurrentDate functions in TLEs. For more information, see Working with the Expression Editor, page 31. Click **Save** when you done with the Expression Editor.
5. Click **Save** when you are done building your TLEs.

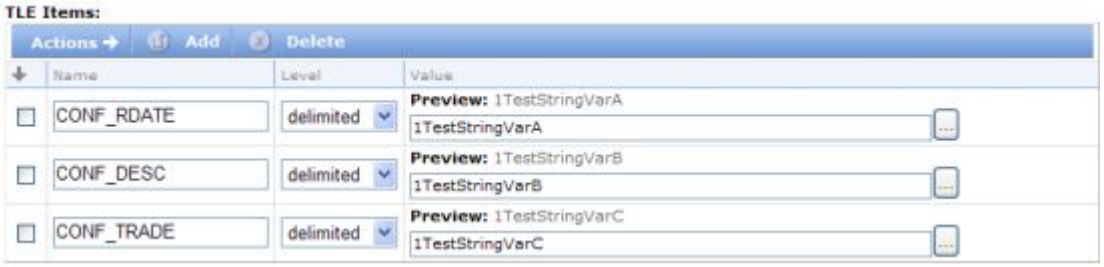
Note: (1) Using variables in TLE items is not supported if you are using imposition in the output. (2) Only EBCDIC characters are supported in TLE items.

Delimited TLE Items

The Delimited TLE level option enables TLEs to be based on a repeated sub-record in the customer data. When Delimited is selected, the TLE will act as a document-level except that multiple TLEs will be generated. The values must be delimited by the pipe (|) character.

Note: The pipe (|) character can't be used in form fields, so any data used to implement repeating TLEs using the Delimited option, can't be used in form fields.

This example shows a TLE with the Delimited option selected



.

Each value for the TLE is evaluated in turn until all values have been determined. So in this example, if the data for CONF_RDATE is "valA1|valA2|valA3", the data for CONF_DESC is "valB1|valB2|valB3", and the value for CONF_TRADE is "valC1|valC2|valC3", the TLE output would be:

```
CONF_RDATE=valA1
CONF_DESC=valB1
```

```
CONF_TRADE=valC1
CONF_RDATE=valA2
CONF_DESC=valB2
CONF_TRADE=valC2
CONF_RDATE=valA3
CONF_DESC=valB3
CONF_TRADE=valC3
```

Missing values are indicated with empty delimiters. All name/value pairs are output, but values are empty. For example, with 1TestStringVarA = valA1||valA3, 1TestStringVarB = valB1|valB2|valB3, and 1TestStringVarC = valC1|| the output would be:

```
CONF_RDATE=valA1
CONF_DESC=valB1
CONF_TRADE=valC1
CONF_RDATE=
CONF_DESC=valB2
CONF_TRADE=
CONF_RDATE=valA3
CONF_DESC=valB3
CONF_TRADE=
```

If a delimiter is missing, then the name will be missing in the output as well. For example, with 1TestStringVarA = valA1||valA3, 1TestStringVarB = valB1|valB2|valB3, and 1TestStringVarC = valC1 the output would be:

```
CONF_RDATE=valA1
CONF_DESC=valB1
CONF_TRADE=valC1
CONF_RDATE=
CONF_DESC=valB2
CONF_RDATE=valA3
CONF_DESC=valB3
```

Creating PostScript Output Definitions

To create a PostScript output definition:

1. From the Output Definition list, click **Add**.
2. In the Name box, provide a name for the output definition. The name must be between 1 and 255 characters in length.
3. In the Format box, select **PostScript**. The PostScript options appear.
4. Some printers are only able to support a specific resolution. If your document contains images of a higher resolution than your printer can support, the printer will still print the images at the lower resolution. In this case, the higher resolution images are making your file size unnecessarily large. Use the **Resample Images to Output Resolution** option to enable xPression to resample your images to the resolution setting defined in your Printer Definition.
5. In the Select a printer for the output list, select the appropriate output printer from the drop-down list. This list is populated by the devices you have defined in the printer definition page.
6. If you are storing fonts on your printer and therefore do not need to embed fonts in your output file, you can define those fonts in the Not Embed Font List. For all fonts defined in this table, xPression will not embed the fonts in the output file. For instructions on adding fonts to the Not Embed Font List, see The Do Not Embed Font List, page 231.

7. The Title section enables you to define a field representing the title of the output document. By default, xPression populates this field with the name of the xPression document. This setting is optional.
8. The Author section enables you to define a field for identifying the author of the output document. By default, xPression leaves this field empty. This setting is optional.
9. The Subject section enables you to define a field representing the subject of the output document. By default, xPression leaves this field empty. This setting is optional.
10. The Keywords section enables you to define a field for keywords you want to include in the document properties of the output document. By default, xPression leaves this field empty. This setting is optional.
11. The Creator section enables you to define a field for identifying the creator of the output document. By default, xPression leaves this field empty. This setting is optional.
12. The Comments list enables you to specify comments that you want included in the output file. Comments are ignored by the printer. Select the desired level and position for the comment. The level can be Document, Package, or Partition, and the position can be either the beginning or end of the selected level. Multiple entries for the same level can be selected. For more information, see Adding Comments to Your Output File, page 232.
13. Click **Save** when finished.

Creating PCL Output Definitions

Please see the following topics regarding PCL output:

- Creating a PCL Output Definition, page 211
- PCL Output Limitations, page 212

Creating a PCL Output Definition

To create a PCL output definition:

1. From the Output Definition list, click **Add**.
2. In the Name box, provide a name for the output definition. The name must be between 1 and 255 characters in length.
3. In the Format box, select **PCL**. The PCL options appear.
4. Select whether or not you want to scale down any large external TIFF images to the printable area of the page. Select **yes** to scale the images, or **no** to not scale the images.
5. For the “Select Run Length Encoding for the image” option, to use run-length encoding to compress images in the output file.
6. In the Select a printer for the output list, select the appropriate output printer from the drop-down list. This list is populated by the devices you have defined in the printer definition page.
7. If you are storing fonts on your printer and therefore do not need to embed fonts in your output file, you can define those fonts in the Not Embed Font List. For all fonts defined in this table,

xPression will not embed the fonts in the output file. For instructions on adding fonts to the Not Embed Font List, see The Do Not Embed Font List, page 231.

8. The Comments list enables you to specify comments that you want included in the output file. Comments are ignored by the printer. Select the desired level and position for the comment. The level can be Document, Package, or Partition, and the position can be either the beginning or end of the selected level. Multiple entries for the same level can be selected. For more information, see Adding Comments to Your Output File, page 232.
9. Click **Save** when finished.

PCL Output Limitations

PCL output has the following limitations:

- If blank pages are generated during publishing of PCL output, the generated blank pages will not be shown in the PCL Reader viewer.
- In PCL output, all pages have a small outside border (approximately 1/6th of an inch) that is outside the printable area of the page. This means that the printable area of the page is slightly smaller than the total page size. When a PCL document contains a full-page TIFF image, the image will appear to be off-center because the image begins at the boundary of the printable area, not the boundary of the page.

  To compensate for this issue, xPression enables you to automatically scale down the size of the image to fit the printable area of your page by using the “Scale down large external TIFF to printable area” option. You can choose “yes”, which enables xPression to determine if the image size exceeds the size of the printable area and then scale the image to fit. Or, you can choose “no”, which disables the feature.

  When enabled, the feature applies to all images processed by the output definition. This feature will have a negative impact on publishing performance. The more full-page TIFF images contained within the document, the greater the impact on performance.
- The xPression PCL emitter does not support documents that contains charts (DDGs) created through xDesign or the xPresso client applications.

Creating Text Output Definitions

A Text output definition produces output to text-only devices such as text files, plain text emails, Short Message Service (SMS) devices, and reports.

When output is sent through a Text output definition, it is assumed that the text will not be printed directly. Text output will be formatted for use as input to a computerized system such as email, notepad, or free text in a database. No pagination related functions are applied to the output, and all page-level formatting is removed. For example, xPression will ignore all headers and footers, hyphenation, tables of contents, leader characters, and page numbering.

Note: Documents published to Text output can not use recipient processing, markers, or contain images.

The following list identifies the formatting options that are supported through Text output definitions.

Formatting	Definition
Line Wrapping	Line breaks and carriage return characters (lf/cr) are supported for the purpose of breaking long lines.
Character Sets	Supports ASCII, EBCDIC, Unicode, and any other character sets supported by xPublish.
Tables	Table cells are delimited by either tabs or paragraphs. This option is configurable.
Bullets	All bullets are converted to asterisks (*). Indented bulleted lists will receive tab characters to duplicate the indentation.
Numbered Lists	Numbered lists are supported. Indented numbered lists will receive tab characters to duplicate the indentation.

To create Text Output Definitions:

1. From the Output Definition list, click **Add**.
2. In the Name box, provide a name for the output definition. The name must be between 1 and 255 characters in length.
3. In the Format box, select **Text**. The Text options appear.
4. In the Package Delimiter box, you can define a string that can be used to indicate when a new package begins. This step is optional.
5. In the Table Style list, specify how you want to convert your tables. The Tables will be converted to text, and each cell will be separated by either a tab character, a line break, or a string.
   - **Paragraph Marks** - Select this option if you want each cell to appear on a separate line.
   - **Tabs** - Select this option if you want each cell to be separated by a tab character.
   - **Other** - Select this option if you want each cell to be separated by a string. After selecting this option, enter the string in the Table Style Value box.
6. In the Line Change Style box, you can define the line break style that xPression applies to your output. The line break will occur after the number of characters on a line reaches the limit defined in the Max Line Length setting below. When xPression breaks the line, it will insert line break or carriage return characters you select at the break point. You can choose CR_LF, LF_CR, CR, and LF. If you are outputting to a DOS text display, choose CR_LF. If you are on UNIX, choose LF.
7. In the Tab Length box, set the tab length in number of characters.
8. In the Maximum Length of Line box, set the maximum line length of a single line of text in number of characters. In most cases, the Tab Length setting should be less than the Max Line of Length setting for Text output definitions. Otherwise, lists may not be formatted as expected.
9. In the Encoding of Output list, select how you want to encode your output. You can choose from the following formats:
   - UTF-8
   - US-ASCII
   - ISO-8859-1
   - UTF-16BE

- UTF-16LE
- UTF-16
- GB2312

10. In the Ignore Blank Lines list, you can choose to ignore or recognize blank lines. Select Yes or No. If you select No, a new text box named Max Blank Lines will appear. In this box, type the maximum number of blank lines that appear between paragraphs. A value of 0 means that no blank lines are allowed. If you leave the field blank, it means unlimited blank lines are allowed.
11. Click **Save** when finished.

Text Output Definition Options

The following elements are available from the Text Output Definition page.

Element	Definition
Name	Provide a name for the output definition. The name must be between 1 and 255 characters in length.
Format	Select **Text**.
Package Delimiter	Define a string that can be used to indicate when a new package begins. This step is optional.
Table Style	Specify how you want to convert your tables. The Tables will be converted to text, and each cell will be separated by either a tab character, a line break, or a string. • **Paragraph Marks** - Select this option if you want each cell to appear on a separate line. • **Tabs** - Select this option if you want each cell to be separated by a tab character. • **Other** - Select this option if you want each cell to be separated by a string. After selecting this option, enter the string in the Table Style Value box.
Line Change Style	Define the line break style that xPression applies to your output. The line break will occur after the number of characters on a line reaches the limit defined in the Max Line Length setting below. When xPression breaks the line, it will insert line break or carriage return characters you select at the break point. You can choose CR_LF, LF_CR, CR, and LF. If you are outputting to a DOS text display, choose CR_LF. If you are on UNIX, choose LF.
Tab Length	Set the tab length in number of characters.
Maximum Length of Line	Set the maximum line length of a single line of text in number of characters. In most cases, the Tab Length setting should be less than the Max Line of Length setting for Text output definitions. Otherwise, lists may not be formatted as expected.

Element	Definition
Encoding of Output	Select how you want to encode your output. You can choose from the following formats: • UTF-8 • US-ASCII • ISO-8859-1 • UTF-16BE • UTF-16LE • UTF-16 • GB2312
Ignore Blank Lines	Select Yes to ignore blank lines or No to honor them. If you select No, a new text box named Max Blank Lines will appear. In this box, type the maximum number of blank lines that appear between paragraphs. A value of 0 means that no blank lines are allowed. If you leave the field blank, it means unlimited blank lines are allowed.

PDF Output Definitions

With version 4.5, xPression introduces a new, more robust PDF emitter. The PDF emitter used in version 4.2 is still supported in xPression 4.5, but will not be supported in the next version of xPression. Users should migrate to the new PDF emitter and use the old PDF emitter to comparison test.

The old emitter is not enabled by default. To enable the old emitter to work alongside the new emitter, update the EnableOldPDFEmitter property in xPressionPublish.properties located in your xPressionHome directory. When both emitters are enabled in xAdmin, the old emitter is labeled “4.2 PDF” and the new emitter is labeled ”PDF”. You can still use existing “4.2 PDF” Output Definitions when the old emitter is disabled, but you cannot create new “4.2 PDF” Output Definitions.

This format does not use a physical printer to produce the output, so no images can be saved on the printer. However, the output definition page enables you to add the following properties to your PDF output:

- Encryption - You can encrypt your PDF to enable or prohibit the recipient of the PDF from performing certain functions with the file.
- Document Properties - such as Title, Author, Creation date, and more.
- Viewer Preferences - Control the way the Acrobat viewer displays the PDF file.
- PDF bookmarks

See the following topics about PDF Output Definitions:

- PDF Output Limitations and Recommendations, page 216
- PDF/A, PDF/X, and PDF Types, page 216

- Creating a PDF Output Definition, page 217
- Fillable PDF Files, page 219
- PDF Permission, page 220
- Enable PDF Bookmarks, page 220

PDF Output Limitations and Recommendations

xPression PDF output has the following limitations:

- The PDF Bookmarks feature is not supported for documents that use imposition.
- xPression PDFs do not support any embedded Javascript functions.
- When using an external PDF that contains form fields, xPression must embed the form field resources in the PDF. If the external PDF is used multiple times in the document, the resources have to be embedded each time. This creates a very large PDF output file size.
- PDF/A-1a output requires a significantly larger file size than the other types of PDF output. These large files can create Out of Memory errors. For this reason, we recommend against creating very large PDF files with this PDF type.When defining how to partition your output, we recommend against choosing “Single print file for all customers”.
- The PDF/A-1a and PDF/A-1b format was created for archiving purposes. One of the limitations of the format is that fillable PDF form fields are not editable in a PDF/A file. PDF/A output from xPression has this same limitation.
- If you use Type 1 fonts with PDF/A or PDF/X output, the PDF will be published, but your PDF may fail to pass a PDF/A or PDF/X compliance test.
- xPression cannot create PDF/A or PDF/X compliant PDFs when the document contains standard PDFs added as external content, Universal Content, or Data Driven Graphics. xPression will create PDF output in these cases, but the output will fail to pass a compliance test. If you need to create PDF/A or PDF/X compliant PDFs and intend to use external PDFs in the document, the external PDFs must already be compliant with PDF/A or PDF/X.
- The PDF emitter does not convert your images to the required color space for your PDF type. If you are publishing PDF/A or PDF/X, ensure that your source image matches the color space required by your output PDF type. For example, if you are publishing in PDF/X, you should ensure all of your source images use CMYK instead of RGB.

PDF/A, PDF/X, and PDF Types

With the new PDF emitter, xPression supports several PDF types. Some supported PDF types have limitations and requirements, ensure that you understand the limitations of the standard you choose by reading the documentation on the standard. xPression supports the following types:

- Normal
- PDF/A-1a provides ISO 19005-1 Level A conformance which focuses on archiving. The objective of this standard is to ensure the document content can be searched and repurposed.

- PDF/A-1b provides ISO 19005-1 Level B conformance which focuses on archiving. The objective of this standard is to ensure reliable reproduction of the visual appearance of the document.
- PDF/X-1a is an ISO standard based on PDF 1.3 and PDF 1.4 with a number of limitations and requirements beneficial to prepress environments.
- PDF/X-3 is an ISO standard based on PDF 1.3 and PDF 1.4 much like PDF/X-1a, but this standard focuses on black and white, CMYK, and spot color implementations.

For complete details about what uses, requirements, and limitation imposed by these standards, see ISO.org. Also, please see PDF Output Limitations and Recommendations, page 216 for some limitations involving these types of PDFs and PDFs in general.

Creating a PDF Output Definition

These instructions cover creating a PDF Output Definition with the new PDF emitter. For instructions on creating a PDF Output Definition with the old emitter (4.2 PDF), see your xPression 4.2 documentation. For more information on this issue, see PDF Output Definitions, page 215.

To create PDF Output Definitions:

1. From the Output Definition list, click **Add**.
2. In the Name box, provide a name for the output definition. The name must be between 1 and 255 characters in length.
3. In the **`Format`** box, select **PDF**.
4. In the **`PDF Type`** box, select the type of PDF you want to create. The options on this page will change based on the type of PDF to select. Your options are:
   - Normal
   - PDF/A-1a
   - PDF/A-1b
   - PDF/X-1a
   - PDF/X-3

   See PDF/A, PDF/X, and PDF Types, page 216 for more information.
5. PDF/A users will see an **`ICC Profile`** option. An ICC Profile is an International Color Consortium (ICC) profile that identifies the color space xPression will use to create your PDF. Your two options are:
   - sRGB — this profile is used for displaying media on monitors and web pages. It is also used by mid-to-entry level printers, digital cameras, and scanners.
   - Web Coated SWOP 2006 Grade 5 Paper — this profile is used for CMYK print jobs.
6. Select the **Resample Images to Output Resolution** check box if your document contains images of a higher resolution than your printer can support.Your printer will still print the images at the lower resolution, but your PDF file size will be large due to the higher resolution images. Use this option to enable xPression to resample your images to the resolution setting defined in your Printer Definition, thereby also reducing the PDF file size..

7. In the **`Select a printer for the output`** drop-down list, select the appropriate output printer. This list is populated by the devices you have defined in the printer definition page.
8. For the **`Page Scaling`** option, select **App Default**, or **None**. This option enables you to use the application default setting for page scaling, or to specify no page scaling. Page Scaling is a property of PDF documents. Refer to www.adobe.com for information about using Page Scaling.
9. In the **`Compress PDF`** list, select True if you want to compress your embedded fonts. This will make the PDF file size smaller, but because additional compression will be done, the processing time will be longer.
10. Users of the "Normal" or PDF/A" options will see the **`Fillable PDF`** option. This option enables you to create PDFs with form fields that can be filled in by your users. For more information, see Fillable PDF Files, page 219.
11. Users of the "Normal" PDF option will see the **`Do Not Embed Font List`** option. If you are storing fonts on your printer and therefore do not need to embed fonts in your output file, you should define those fonts in the Not Embed Font List. For all fonts defined in this table, xPression will not embed the fonts in the output file. For instructions on adding fonts to the Not Embed Font List, see The Do Not Embed Font List, page 231.
12. If you want to enable PDF bookmarks on all document created with this output definition, select Enable Bookmarks. When you select this option, three additional options appear.
    - Package Name - If you define a Package Name value, this value will be the top PDF bookmark in your document. This value cannot contain the plus (+) symbol.
    - Document Name - If you define a Document Name value, this value will be the second PDF bookmark in your document.
    - Levels in Document - The value you define in this box will determine the total number of bookmark levels in your document. The Document Name and Package Name bookmarks are not counted in this value.

    For more information, see Enable PDF Bookmarks, page 220.
13. In the Title section, define a field representing the title of the output document. By default, xPression populates this field with the name of the xPression document. This setting is optional.
14. In the Author section, define a field for identifying the author of the output document. By default, xPression leaves this field empty. This setting is optional.
15. In the Subject section, define a field representing the subject of the output document. By default, xPression leaves this field empty. This setting is optional.
16. In the Keywords section, define a field for keywords you want to include in the document properties of the output document. By default, xPression leaves this field empty. This setting is optional.
17. In the Creator section, define a field for identifying the creator of the output document. By default, xPression leaves this field empty. This setting is optional.
18. Users of the "Normal" PDF option will see the User Key and Owner Key sections. Using these options, you can set User and Owner passwords to enable encryption on the PDF output document.

    You can encrypt your PDF to enable or prohibit the recipient of the PDF from performing certain functions with the file. For example, you can enable the user to save the PDF or prohibit them from printing the PDF. Encrypted PDFs prompt the user for a password to access the PDF.

There are two levels of users for PDF encryption: Owner: The owner has all permissions and rights for the PDF. User: The user has only those permission granted in the Permissions box.

User - Define a case-sensitive user password. The PDF prompts the user for this password while accessing the PDF. The password should not be more than 32 characters in length. If the password is longer than 32 characters, the Adobe PDF library will truncate the password to 32 characters.

Owner - The value of OwnerKey is a string for owner password, it is also case sensitive. The password should not be more than 32 characters in length. If the password is longer than 32 characters, the Adobe PDF library will truncate the password to 32 characters.

If there is a value for Owner Key a Permission must be selected. If no Permission is selected, and there is a value for Owner Key, then security will not be applied to the PDF.

19. Users of the "Normal" PDF option will see the **`Permission`** option.This option lets you grant permissions to the user. Click **`Permission`** and select one or more values from the list. You can select the following permissions:
    - **Print the document** - Permits the user to print the document. The user can still access the Page Setup functions.
    - **Edit the document**- Permits the user to use the Crop tool, the Movie tool, the Article tool, and the Link tool.
    - **Modify the annotation** - Permits the user to add, modify, and delete text annotations.
    - **Copy the document information** - Permits the user to copy information from the document to the clipboard.
    - **Fill in the form of the document** - Enables the user to fill in a PDF form. Ensure you use this permission if creating fillable PDF forms.
    - **Assemble the document** - Enables the user to insert pages, rotate pages, delete pages, create bookmarks, and create thumbnail images.
    - **Screen Reader** - Enables the user to use text-to-speech software to read the PDF document.
    - **Degraded Printing** - Enables the user to print the file at a lower quality level.
    - **Set all operations** - Enables all the operations in the permission controls list.
20. The Comments list enables you to specify comments that you want included in the output file. Comments are ignored by the printer. Select the desired level and position for the comment. The level can be Document, Package, or Partition, and the position can be either the beginning or end of the selected level. Multiple entries for the same level can be selected. For more information, see Adding Comments to Your Output File, page 232.

Fillable PDF Files

Fillable PDF documents enable you to provide PDFs with fillable form fields. When this option is selected, xPression will support form fields in the output PDF and retain any data assigned to the form field. If this option is not selected, the PDF form field will not be active and will display only the default value. This feature supports form fields in PDFs created by xPression and PDFs inserted as external content or Universal Content.

Adobe Reader does not support retaining changed field values while saving a PDF. The changed document can be printed with the changed values. Adobe Acrobat Professional supports saving the PDF file with changed values.

PDF Permission

You can select the following permissions from the Permissions list in the PDF Output Definition page.

Element Name	Description
Print the document	Permits the user to print the document. The user can still access the Page Setup functions.
Edit the document	Permits the user to use the Crop tool, the Movie tool, the Article tool, and the Link tool.
Modify the annotation	Permits the user to add, modify, and delete text annotations.
Copy the document information	Permits the user to copy information from the document to the clipboard.
Fill in the form of the document	Enables the user to fill in a PDF form. Ensure you use this permission if creating fillable PDF forms.
Assemble the document	Enables the user to insert pages, rotate pages, delete pages, create bookmarks, and create thumbnail images.
Screen Reader	Enables the user to use text-to-speech software to read the PDF document.
Degraded Printing	Enables the user to print the file at a lower quality level.
Set all operations	Enables all the operations in the permission controls list.

Enable PDF Bookmarks

The Bookmark options enable you to define PDF Bookmark settings for your documents. When you click **Enable Bookmark**, three new options appear: Package Name, Document Name, and Levels in Document. The options on this page apply to all documents that use this output definition.

- Transfer External Bookmark — this option ensures that PDF bookmarks in an external PDF file are transferred to the master PDF file, and appended under the root node of the bookmark tree.
- Package Name — when used, defines the name of the second level bookmark.
- Document Name — when used, defines the name of the top level bookmark.
- Levels in Document — defines the number of bookmark levels that will be allowed for any document using this output definition.

See PDF Output Limitations and Recommendations, page 216 for limitations involving this feature.

Levels in Document

The value you define in this box will determine the total number of bookmark levels in your document. The Document Name and Package Name bookmarks are **not** counted in this value. For example, if you define a bookmark level of three, xPression will create bookmarks for the first three levels you have defined in your document.

If your document contains a greater number of outline levels than is defined in the Levels in Document box, the value in the Levels in Document box will be enforced. If you do not define any value in the Levels in Document box, all of the outline levels defined in the document will appear in the PDF output file.

To define bookmark levels for xDesign documents, see the *xDesign Style and Formatting Guide*. To define bookmark levels for xPresso for Word documents, see the xPresso for *Adobe InDesign User Guide*. To define bookmark levels for xPresso for InDesign documents, see the *xPresso for Word User Guide*.

Document Name and Package Name

If you define values for the Document and Package name they will be used as the top two bookmark levels for all documents that use this output definition. You can define a literal value or a variable value. The Package Name is the highest level bookmark and the Document Name is the second level bookmark. One package can contain multiple documents.

To define the name of the Package Name or Document Name bookmarks, click the Add Literal or Add Variable buttons. The Add Literal button enables you to supply a literal string value for the Document or Package Name. The Add Variable button enables you to select an existing output variable to supply the value for the Document or Package Name.

You can add multiple Literal values for the Document or Package Name, but all values will be concatenated into a single value.

Note: The Document Name value cannot contain the plus (+) symbol.

Creating TIFF Output Definitions

TIFF output definitions enable you to send your output to archive systems, fax servers, and other electronic systems as an image file. xPression uses the TIFF format for the output image because TIFF provides the highest quality image and also supports compression. xPression can produce these images at various bit depths and with various compression methods.

Note: Please be aware of the following issues involving TIFF output.

(1) Underscores may not appear in TIFF output, even though they appear in other formats. Resolution in the printer definition should set to a sufficiently high level, such as 120, to ensure that underscores are visible in TIFF output.

(2) The OpenType font ZapfDingbatsStd.otf is not supported for TIFF output because it is not supported by Multivalent, an open source tool used by xPression. EMC Document Sciences recommends replacing it with the Wingdings font.

To create a TIFF output definition:

1. From the Output Definition list, click **Add**.
2. In the Name box, provide a name for the output definition. The name must be between 1 and 255 characters in length.
3. In the Format box, select **TIFF**. The TIFF options appear.
4. Select the **Resample Images to Output Resolution** check box if your document contains images of a higher resolution than your printer can support. In this case, your printer will still print the images at the lower resolution, but your file size will be needless large due to the higher resolution images. Use this option to enable xPression to resample your images to the resolution setting defined in your Printer Definition.
5. In the Select a printer for the output list, select the appropriate output printer from the drop-down list. This list is populated by the devices you have defined in the printer definition page.
6. In the Bit Depth list you can specify the number of bits per pixel for your TIFF output. You can select 1, 8 or 24.
   - 1 = Binary image quality. Every pixel is either black or white.
   - 8 = Grayscale image quality. Every pixel can be either black, white, or one of the 254 shades of gray between them.
   - 24 = Red, Green, and Blue (RGB) image quality. This is a full color image where each pixel is represented by three 8-bit numbers that represent different qualities of red, green, and blue.
7. In the Compression Method list, select your compression method:
   - CCITT T.6 - The standard compression method for binary images. If you select this method, you can only use a Bit Depth of 1.
   - Uncompressed - No compression is used. Performance will tend to be slower and output file size will be larger.
   - LZW - An efficient method for storing repetitive image data commonly found in documents. It is the most commonly used compression method for Web graphics.
   - Pack Bits - A Run Length Encoding (RLE) compression method.
8. In the Publish one image for every page list, select True or False. When True is selected, xPublish will create one TIFF file for each page in the document. When False is selected, xPublish will create one TIFF file which will contain all of the pages in the document.
9. Click **Save** when finished.

Creating HTML Output Definitions

HTML Output definitions enable you to create HTML output for use in creating E-mail communications and HTML website content. Prior to xPression 4.5, users could not create new HTML Output Definitions. xAdmin used a built-in HTML Output Definition to handle HTML output in your Output Profile. This built-in Output Definition will now appear in your Output Definition list under the name “HTML”. You can now configure the built-in Output Definition.

When using HTML Output Definitions, xPression does not support text boxes or text boxes converted to frames with HTML output.

To create an HTML output definition:

1. At the **Output Definitions** page, click **Add**.
2. Select **HTML** from the **Format** list.
3. Specify the image storage path. The image storage path is the location where xPression places the image files that it creates during the publishing process. This location is used by batch jobs and web services. This path must be a location to which xPression has write access. You can specify a local path, a UNC path, or an FTP path.
   - Sample local path: `C:\web\images\` or `/opt/web/images/`
   - Sample FTP path: `ftp://ssmith:pwd123@10.10.5.15/myDirectory/mySubDirectory`

     When supplying an FTP path, use the following format: *`username`*`:`*`password`*`@`*`ip_address`*. The @ symbol is not supported for use in a password.
4. Specify the image URL root. This path is the location that the HTML file uses to find your images. This path can directly correspond to the Image Storage Path setting, or can be a separate location. If it is a separate location, ensure that you copy your files from the storage path to the URL root.

   Sample HTTP path: `http://www.Concordant.com/images`
5. Select the **Use Style Classes (Suppress Inline Formatting)** checkbox if needed. This option works for xPresso for Word only. When selected, this option strips out all styling information and passes through only style names for paragraphs, characters, and table styles.
6. Click **Save**.

The Use Style Classes Option

The Use Style Classes option works for xPresso for Word documents version 4.5 and later only.

Normally, when publishing HTML output for xPresso for Word documents, xPression uses inline style attributes in the output to mimic the presentation in Microsoft Word. That is the formatting is set within the style attribute of a tag. However the use of inline style attributes restricts the ability to repurpose the HTML for other presentations. The style or presentation is not separated from the content. The Use Style Classes option provides a way to separate style from content so that different CSS can be applied depending on the target presentation. When this option is selected, a simple HTML output is generated, in which most inline style attributes are removed. You can perform post-processing on the output if needed. The simple HTML output is well-formed XML, but not XHTML. You can process the HTML output using XML parsers.

When the Use Style Classes option is selected, HTML tag attributes except the following ones are removed in the HTML output:

- Class attributes that are needed to reference styles from Word
- The `src` attribute of `img` tags
- The `href` attribute of `a` tags
- The `colspan` and `rowspan` attributes of `td` tags

The following Word features are not supported:

- Content in text boxes
- Page columns
- Headers and footers
- Page numbers
- Borders and shading via direct formatting

Table 1. Simple HTML Ouput

Elements in Word	Simple HTML Output	Examples

Paragraphs	Word paragraphs are output as content in `P` tags. Only the `class` attribute is specified for a `P` tag. The value of the `class` attribute is the name of the style applied on the paragraph in Word. Spaces in the Word style name are replaced with underscores. For example, the **Book Title** style applied on a paragraph is output as the **Book_Title** value of the `class` attribute of a `P` tag.	Sample ouput
		`<p class="test">`
		`This is a paragraph.`
		`</p>`
		An example of formatting a paragraph using CSS:
		`p.test`
		`{ font-family:"Cambria";`
		`font-size:14pt;`
		`font-variant:normal;`
		`text-align:left;`
		`text-transform:none;`
		`margin-top:0pt;`
		`margin-right:0pt;`
		`margin-bottom:0pt;`
		`margin-left:0pt}`

Character Styles	A Word character style is output as the `class` attribute value of `SPAN` tags. The `SPAN` tags are placed around the content to which the character style is applied. The value of the `class` attribute is the name of the character style. Spaces in the style name are replaced with underscores.	Sample output:
		`<p>`
		`This is a <span class="Subtle _Reference"> Word style</span>.`
		`</p>`
		An example of defining a character style in CSS:
		`span.Subtle_Reference`
		`{ font-variant:small-caps;`
		`text-align:left;`
		`text-transform:none }`

<table>
<tr>
<td>xPresso for Word Variables</td>
<td>xPresso for Word variables are contained in SPAN tags that have a class attribute of xWordVariable.</td>
<td>Sample output:
<pre><p>
Add a time variable <span class
="xWordVariable">20:10.
</p></pre>
An example of defining a character style for variables in CSS:
<pre>span.xWordVariable
{ color:red;
font-family:'Calibri';
font-size:40pt;
font-weight:bold;
font-style:italic;
text-decoration:underline;
text-underline:solid;
margin-bottom:10pt }</pre></td>
</tr>
<tr>
<td>Tables</td>
<td>Tables are output as TABLE, TR, and TD tages. Nested tables are supported.
• The Word styles applied to the table is output as the class attribute value of TABLE tags. The value of the class attribute is the name of the style. Spaces in the style name are replaced with underscores.
• Class attributes are not specified for TR and TD tags .
• Colspan and rowspan attributes are specified for TD tags if needed.
• P tags are always generated for the content in TD tags, even if there is only a single paragraph in the cell.</td>
<td>Sample output:
<pre><table class="myTable">
<tr>
<td>
<p>Cell A</p>
<p>Test></p>
</td>
<td><p>Cell B</p></td>
</tr>
<tr>
<td colspan="2">
<p>Cell C</p>
</td>
</tr>
</table></pre>
An example of formatting table cells using CSS:
<pre>table.myTable td
{ test-align:right;
text-transform:uppercase;
border-collapse:collapse;
border-left: none;
border-bottom:solid #E36C0A
4.5pt;
border-right:solid #E36C0A 4.5pt;
border:solid #E36C0A 4.5pt;
font-weight:bold;
font-style:italic;
font-size:11pt; }</pre></td>
</tr>
</table>

		An example of formatting the second paragraph in the first cell of the first row using CSS:
		`table.myTable>`
		`tbody > tr:first-child >`
		`td:first-child>p:first-child+p`
		`{ font-weight:bold;`
		`font-style:italic;`
		`font-size:11pt; }`

Images	Word images are output as `IMG` tags. Only the `src` attribute is specified for `IMG` tags. The `class` attribute is not specified for `IMG` tags. If you need a `class` attribute, apply a character style to an image. The character style is output as the `class` attribute of `SPAN` tags. Spaces in the style name are replaced with underscores.
	
	Width and height attributes are not specified for `IMG` tags. Use an image with desired size and resolution in your xPresso for Word document to avoid resizing the image. Or specify an appropriate character style for the image.
		Sample output:
		`<span class="imagesize">`
		`<img src="smiley.gif"/>`
		`</span>`
		
		Examples of defining character styles in CSS to resize an image:
		`span.imagesize>img`
		`{ width:50px;`
		`height:50px;`
		`}`
		`span.imagesize>img`
		`{ width:20%;`
		`height:20%; }`

Numbered Lists	Numbered lists are created as paragraph content with numbering. For numbered lists that are created by Word styles, the paragraph `class` attribute contains the name of the style. Spaces in the style name are replaced with underscores.
	
	Nested numbered lists are supported.
		Sample output:
		`<p class="numbered_list">`
		`1.    List 1`
		`</p>`
		`<p class="numbered_list">`
		`2.    List 2`
		`</p>`
		
		An example of formatting an numbered list using CSS:
		`p.numbered_list`
		`{ font-family:Calibri;`
		`font-size:11pt;`
		`line-height:115.0%;`
		`font-style:normal;`
		`text-indent:-18pt;`
		`margin-left:36pt }`

Bulleted Lists	Bulleted lists are created as paragraph content. For bulleted lists that are created by Word styles, the paragraph `class` attribute contains the name of the style. Spaces in the style name are replaced with underscores. The bullet portion of the list content is wrapped in `SPAN` tags with the class attribute named bullet.
	
	Nested bulleted lists are supported.
		Sample output:
		
		`<p class="List_Paragraph">`
		`<span class=”bullet”>`
		`[bullet char]    `
		`</span>`
		`Bullet 1`
		`</p>`
		`<p class="List_Paragraph">`
		`<span class=”bullet”>`
		`[bullet char]    `
		`</span>`
		`Bullet 2`
		`</p>`
		
		An example of formatting a bulleted list using CSS:
		
		`p.List_Paragraph`
		`{ font-family:Calibri;`
		`font-size:11pt;`
		`line-height:115.0%;`
		`font-style:normal;`
		`text-indent:-18pt;`
		`margin-left:36pt }`

Form Controls	Checkboxes, drop-down lists, and rich text boxes are supported. Form controls are output as `INPUT` tags and `SELECT` tags with attributes of `type`, `value`, `name`, `checked`, and `selected`. Spaces in the name value are replaced with underscores.	Sample output:
		
		`<input type="checkbox" name="Check_Box_Content_Control_James">`
		
		An example of formatting checkboxes using CSS:
		
		`input[type="checkbox"]`
		`{ display: block;`
		`width: 7px;`
		`height: 7px;`
		`border-width: 1px;`
		`border-style: solid;`
		`border-color: #B3B3B3 #dcddde #dcddde #B3B3B3;`
		`content: "";`
		`}`

Headings	Paragraphs that are applied with styles whose names start with "Heading" are output as HTML heading elements. The heading level in the HTML output is the same as the Word outline level. A Microsoft Word paragraph style of “Heading 1” creates `h1` tags in the HTML output, a “Heading 2” paragraph style creates `h2` tags, and so on. Six levels of Word outline level are supported. If the outline level is greater than six, a heading is converted to `P` tags with style name as the `class` attribute value.	Sample output:
		`<h1 class="heading_1"> Heading 1 </h1>`
		`<p class="heading_7"> Heading 7 </p>`
		Examples of formatting headings using CSS:
		`h1.heading_1 { color:#365f91; line-height:115.0%; font-weight:bold; font-style:normal; margin-top:24pt" }`
		`p.heading_7 { color:green; font-size:18pt; line-height:115.0%; font-style:normal; margin-top:10pt }`

Soft Line Breaks	Soft line breaks (Shift + Enter) are output as `BR` tags.	Sample output: `<p> Break lines   in text. </p>` The following is an example of formatting line spacing using CSS: `br {line-height: 1.5em}`

Example

In this example, you are designing an xPresso for Word document that needs to be published to PDF and HTML. The layout and formatting of the HTML output is required to vary according to the display device, such as a mobile phone, a tablet, and a computer. To meet the requirements, you can define and apply styles in the template, which are used in the PDF output. For HTML output, you can select the Use Style Classes option to get a clean HTML output, in which most of the inline styles are removed, and then define and apply different styles for different devices.

As shown in the following figure, two channels are associated with the template: Print and Web. The Print channel is used to create the PDF output. A number of styles are defined and applied in the template as needed for the PDF output. The style names all start with “XPRS”. The Web channel is used to create the HTML output. A template shell is mapped to the Web channels to define the look of the HTML output. You can use CSS to redefine the “XPRS” styles for the HTML output.

The following is a sample template shell file. In the template shell, inline CSS is specified, and media selectors are used to control the appearance of the content. Depending on the display device, the style definitions are changed.

```
<html xmlns="http://www.w3.org/1999/xhtml">
<head>
<meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<title>Fraud Notice</title>
<style>
/* Global */
p.XPRSLogo { text-align: center; }
p.XPRSTableHeader { font-weight:bold; }
p.XPRSTableHeaderNumeric { font-weight:bold; }
p.XPRSBodyText { }
p.XPRSTableData { }
p.XPRSTableDataNumeric { }
td p { margin-top: 0px; margin-bottom: 0px; }

/* Phone */
@media screen and (min-width: 150px) and (max-width: 500px) {
 body { padding: 10px; font-family: "Arial"; font-size: 1em; }
 p.XPRSLogo img { width: 108px; height: 43px; }
 p.XPRSSalutation { }
 span.XPRSEmphasis { font-weight:bold; color: #00FF00; }
 p.XPRSSectionLabel { font-weight:bold; color: #00FF00; margin-bottom: 0px; }
 table.Table_Grid tbody tr:first-child { background: #B7DDE8; }
 table.Table_Grid tbody tr:nth-child(2n+3) { background: #FFF799; }
 table.Table_Grid tbody tr td:first-child { width: 75px; }
 table.Table_Grid tbody tr td:nth-child(2) { width: 150px; }
 table.Table_Grid tbody tr td:nth-child(3) { width: 100px; text-align: right}
 p.XPRSTableData { }
 p.XPRSTableDataNumeric { }
 p.XPRSClosing { }
}

/* Tablet */
@media screen and (min-width: 501px) and (max-width: 800px) {
 body { padding: 10px; font-family: "Times New Roman"; font-size: 1.2em; }
 p.XPRSLogo img { width: 144px; height: 57px; }
 p.XPRSSalutation { margin-top: 20px; }
 span.XPRSEmphasis { font-weight:bold; color: #FF0000; }
 p.XPRSSectionLabel { font-weight:bold; color: #FF0000; margin-bottom: 0px; }
 table.Table_Grid tbody tr:first-child { background: #C3D69B; }
 table.Table_Grid tbody tr:nth-child(2n+3) { background: #E5E0EC; }
 table.Table_Grid tbody tr td:first-child { width: 75px; }
 table.Table_Grid tbody tr td:nth-child(2) { width: 250px; }
 table.Table_Grid tbody tr td:nth-child(3) { width: 150px; text-align: right}
 p.XPRSClosing { margin-top: 20px; }
}

/* Desktop */
@media screen and (min-width: 801px) and (max-width: 10000px) {
 body { padding: 20px; font-family: "Calibri"; font-size: 1.2em; }
 p.XPRSLogo img { width: 216px; height: 85px; }
 p.XPRSSalutation { margin-top: 50px; }
 span.XPRSEmphasis { font-weight:bold; color: #0000FF; }
 p.XPRSSectionLabel
  { font-family:"Cambria"; font-weight:bold; color: #0000FF; margin-bottom: 0px; }
 table.Table_Grid tbody tr:first-child { background: #C6D9F0; }
 table.Table_Grid tbody tr:nth-child(2n+3) { background: #FDEADA; }
 table.Table_Grid tbody tr td:first-child { width: 100px; }
 table.Table_Grid tbody tr td:nth-child(2) { width: 300px; }
 table.Table_Grid tbody tr td:nth-child(3) { width: 200px; text-align: right}
```

```
 p.XPRSClosing { margin-top: 50px; }
}
</style>
</head>
<body>
<xPresso type="insertionpoint" name="Content">Content</xPresso>
</body>
</html>
```

Creating PPML Output Definitions

PPML (Personalized Print Markup Language) is a device-independent standard that enables the widespread use of personalized print applications in high volume. The XML-based printer language enables printers to manage variable data by sending all the data to the printer at once, making for much faster printing. PPML makes the reuse of resources (reusable content) explicit, and enables the printer to know which resources are required at particular points in the job.

PPML optimizes digital print workflows by allowing objects that are placed on many pages to be defined once, marked as reusable, and used multiple times. In xPression, no external content, subdocuments, or Universal Content items will be reused in PPML output. All image formats supported for PDF output are supported by PPML output; however, only JPEG and TIFF images are reused.

To create PPML Output Definitions:

1. From the Output Definition list, click **Add**.
2. In the Name box, provide a name for the output definition. The name must be between 1 and 255 characters in length.
3. In the Format box, select **PPML**.
4. In the Select a printer for the output drop-down list, select the appropriate output printer. This list is populated by the devices you have defined in the printer definition page.
5. Select your page scaling setting: **App Default**, or **None**. Page Scaling is a property of PDF documents. Refer to www.adobe.com for information about using Page Scaling.
6. In the Compress PDF list, select True if you want to compress your embedded fonts. This will make the PDF file size smaller, but because additional compression will be done, the processing time will be longer.
7. If you are storing fonts on your printer and therefore do not need to embed fonts in your output file, you can define those fonts in the Do Not Embed Font List. For all fonts defined in this table, xPression will not embed the fonts in the output file. For instructions on adding fonts to the Not Embed Font List, see The Do Not Embed Font List, page 231.

Creating “No Output” Output Definitions

The No Output output definition enables you to run a job and gather information about the job (metadata) without producing any output. This is useful for complex processing jobs, where the

information gathered by the No Output run can be processed by a custom program and then used during a second job run to process and sort the output.

To create No Output Output Definitions:

1. From the Output Definition list, click **Add**.
2. In the Name box, provide a name for the output definition. The name must be between 1 and 255 characters in length.
3. In the Format box, select **No Output**.
4. In the Select a printer for the output drop-down list, select the appropriate output printer. This list is populated by the devices you have defined in the printer definition page.

The Do Not Embed Font List

If you are storing fonts on your printer and therefore do not need to embed fonts in your output file, you can define those fonts in the Do Not Embed Font List. For all fonts defined in this table, xPression will not embed the fonts in the output file.

Note: For characters that are not in Windows code page 1252 (ANSI), xPression uses the Identity−H and CID font type, which requires the fonts must be embedded. If you add those fonts in the Do Not Embed Font List, the fonts are still embedded in your output file.

When you have a character that cannot be printed correctly using your printer resident font, you have the following options:

- First, check the printer resident font character set. If the character is not represented, you can choose to point to a similar character.
- Change the font to a character set that contains your chosen character.
- Use an embeded font to carry the glyphs of characters used in the document.

Some output formats enable you to add fonts to the Do Not Embed Font List. To add fonts to the Not Embed Font List:

1. Click **Add**.
2. A new row appear in the Do Not Embed Font List.
3. In the Document Font list, select your font. This is the name of the True Type font used in your document that need to be replaced by printer resident fonts.
4. In the Printer Font Name, supply the name of the printer resident font on the print device. This name could be a True Type font name or a character for AFP fonts.

   For PostScript output, you have the option of querying the printer PPD file and selecting a font from the list generated by the query. To query the PPD file, select the **Reference PPD** check box. The file is queried, and the Printer Font Name drop-down list is populated with the fonts in the file. If no PPD file is defined for the selected printer, an error message appears. For more information, see PostScript Printer Resident Fonts, page 232.
5. (AFP output definitions only) In the Printer Font Type list, specify the printer font type by selecting TrueTypeFont or AFPFont.

6. (AFP output definitions only) In the Printer Font Code Page list, specify the name of the print device's codepage.

PostScript Printer Resident Fonts

There is an assumption in xPression that all printer resident fonts (fonts included in the Do Not Embed Font List) have a "Standard" character set. xPression does not consider that some may need ISOLatin1 and possibly other character sets. Because of this, when using printer resident fonts to print PostScript documents that have accented characters within them, the accented characters are not included in the PostScript output. There are two ways around this behavior.

When xPression uses a font that is not printer resident, it opens and reads the font to determine what it should use, and puts the appropriate PostScript codes in the output file to ensure the correct characters are output. Because of this behavior, it is possible to work around the missing accented characters issue by renaming the fonts, thus forcing xPression to open the font and determine the encoding.

The second option to work around this issue is to use a PPD file. To ensure that xPression uses the correct encoding for your printer resident fonts, you can use the **Reference PPD** option on the Do Not Embed Font List for PostScript output. To use this option, you must have a PPD file that specifies the correct encoding, and the PPD file must be associated with the printer you are using in the output definition. The Reference PPD option queries the PPD file and produces a list of fonts contained within it, from which you can select the printer resident font to use.

Adding Comments to Your Output File

Most output formats enable you to add comments to your output file. Comments are ignored by the output device. Comments are not supported for Text, Tiff, PPML, and No Output output formats.

You can build your comments using literal values, variable values, built-in functions, and custom expressions. Comments can be located at the document, package, or partition level, and can be positioned at the beginning or the end of the selected level. For AFP and PostScript output, comments can also be located at the page level.

To define a comment

1. In the **Comments** section, click **Add**. A new row appears in the table.
2. From the drop-down list, select the level where you want the comment to appear.
3. Define your comment. If you are using a literal value, simply type the value. If you want to use a variable, function, or a custom expression, click the browse button to open the Expression Editor. For more information, see Working with the Expression Editor, page 31. Click **Save** when you done with the Expression Editor.
4. Click **Save** when you are done defining your comments.

Note: (1) Using variables in comments is not supported if you are using imposition in the output. (2) Only EBCDIC characters are supported in TLE items.

Using a Cyclic Counter

You can create a cyclic counter for use in a comment, using the following expression:

```
numericToStringNoLeadingZeros( ((CurrentPageInPartition-1)%n+1), 0)
```

Where "*n*" is the ultimate number of the cycle. That is, 1,2,3,...*n*,1,2,3,...*n*, and so on.

For example, if *n* = 10, the expression is:

```
numericToStringNoLeadingZeros( ((CurrentPageInPartition-1)%10+1), 0)
```

Stream Definitions

An Output Stream is a collection of assembled documents with similar publishing and distribution criteria. xPression uses output streams to distribute documents by combining them with an output definition and a distribution definition in an output profile. Output streams are the method xPression uses to place documents into your output management settings. You can also associate markers, recipients, crop marks, and content stamps with your output stream.

You add documents to an output stream by defining output stream criteria with inclusion conditions. These inclusion conditions query the data in your documents to determine whether or not a document is eligible for a given output stream.

By splitting documents into different streams, you can send different versions of the same document to multiple recipients.

For example, one stream can be configured to contain full documents intended for an insurance policy customer, a second stream can contain abbreviated documents intended for the insurance agent, and a third stream for the corporate archive solution. This scenario is achieved by using three output streams designated for three separate recipients. All three streams can be executed at once using a single output profile definition.

See the following topics:

- Output Stream: List Options, page 233
- Stream Definition General Tab Options, page 235
- Output Stream Marker Tab Options, page 241
- Output Stream Content Stamp Tab Options, page 241
- Output Stream Crop Marks Tab Options, page 241
- Output Stream Separator Sheet Tab Options, page 242
- Output Stream Postal Processing Tab Options, page 242
- Working with Multiple Inclusion Conditions, page 242

Output Stream: List Options

To access the output stream list, click the **xPublish Output Management** menu and click **Stream Definitions**. This page contains the following elements.

Element Name	Description
Add Button	Enables you to create a new stream definition.
Copy	To create a duplicate item, select the item you want to copy and click **Copy**. The duplicate item appears in the list with the words “Copy of” placed before the original name.
Delete	Select the item you want to remove and click **Delete**.
Output Definition List	To edit the settings of an existing item, click the item name.

Stream Definition General Tab Options

To view the General tab, click a document name from the output steam list or click **Add** from the output stream list. The General tab contains settings for the output stream name, recipients, sorting, grouping, and inclusion conditions.

- Name, page 235
- Channel, page 235
- Plex mode, page 236
- Recipient, page 236
- Imposition, page 236
- DDG Resolution, page 236
- Image Preference, page 237
- Reverse Printing, page 238
- Rotate Pages 180, page 238
- Log Font Information, page 238
- Force New Sheet for Media Marker if in Duplex, page 238
- Sorting, page 238
- Grouping, page 239
- Inclusion Condition, page 240

Name

Type a name for the new output stream in the Name field. The name can be up to 255 alphanumeric characters.

Channel

Select a predefined Channel from the list. Multichannel functionality allows a single document template to be published through different output channels. xPression channels can create paginated, HTML, or plain text output. Channels work with xPresso for Word and xPresso for Dreamweaver only. When creating content in these applications, you can associate regions of text with a specific channel. When you associate your stream a channel, xPression will select the content of the specified channel.

For more information about Channels, see Channels, page 116.

Plex mode

Enables you to set the plex mode for the stream. You can select Simplex, Duplex, and Duplex-Simulate Simplex. See Duplex Printing Limitations, page 236 for limitations.

If you choose Simplex or Duplex, the stream uses the simplex or duplex plex mode until it encounters a marker that changes the plex mode. This option is useful for simple jobs that do not require a change in plex mode.

Duplex-Simulate Simplex mode set the plex mode as Duplex, but simulates simplex mode by inserting blank pages for every verso page.

Duplex Printing Limitations

In duplex printing mode, xPression may need to insert a blank page before an odd or even page. For example, when one content item ends on an odd page and the next content item is defined to start on an odd page, xPression will place a blank page in between them. When xPression inserts a blank page before an odd page, the blank page uses the same page size as the preceding page, not the designated odd page. Conversely, when xPression places a blank page before a designated even page, the blank page uses the same page size as the following page (the designated even page).

Recipient

This feature is not supported for xPresso documents.

In the Recipient field, select a recipient for this output stream. Only documents for the specified recipient are included in the output stream. You can select the name of a single recipient, or select <ALL> to generate the stream for all recipients.

Imposition

If you are implementing any of the imposition types on the documents in this stream, select the imposition definition from this list.

DDG Resolution

Specifies the resolution to be used for dynamic charts (data driven graphics) when they are resolved in the stream output. During publishing, the native chart image is converted to a JPEG image. The resolution specified here will be the resolution of the resulting JPEG image. The default value of -1 for this option instructs xPression to use the resolution defined in the printer definition for the JPEG image. If the printer definition does not specify a DDG resolution then the default value is 96 DPI. It is recommended that a lower resolution, such as 96, be used, since higher resolutions may cause the chart to appear smaller and tighter, making it difficult to distinguish different patterns within the chart.**Note:** If the resolution is set to a very large number (such as 400), the fonts in the

resulting chart image will appear very small in size. This is an issue with the Corda software used for charts, not with xPression.

Image Preference

When producing output, xPression selects the image best suited for your output format. If you want control which image formats xPression selects, you can use this feature to set the priority of image formats. When you click this button, xPression displays a pop up window that enables you to rank image formats.

When producing output, xPression selects the image best suited for your output format. If you want to control which image formats xPression selects for the output stream, you can use this feature to set the priority of image formats. When you click this button, xPression displays a pop up window that enables you to rank image formats.

By default, xPression uses the following preferences for each image type.

Output Format	Image Preference
PostScript	eps;jpg;jpeg;tif
AFP	jpg;jpeg;gif;tif;tiff;group4
HTML	png;jpg;jpeg;gif;bmp
PDF	tif;tiff;pdf;png;jpg;jpeg;gif;bmp
PCL	tif;tiff

You can change these default preferences by editing the DCPI.properties file in the xPressionHome directory. The image preferences you set on the output stream will override the default preferences defined in the DCPI.properties file.

To use the Image Preference feature to set the image preference for your output stream:

1. Click **Image Preference**. The Image Preference page appears.
2. Select an image format from the Available Images list and click **Add**.
3. The image format is moved to the Images list.
4. Repeat this process for all of your image types. Once you have all your image types in the Images list, use the Move Up and Move Down buttons to rank the image formats from top to bottom. The image formats at the top of the list will be used first.
5. When finished, click **Open**. The image formats appear in the Image Preference box.
6. Click **Save** to save your output stream.

Reverse Printing

Only valid for AFP, PCL, PostScript, and PDF output. When selected, the order of the printed document will be reversed. For example, instead of printing pages 1, 2, and 3, it will print in reverse order 3, 2, and 1. Not supported for documents that use imposition.

Rotate Pages 180

Only valid for AFP, PostScript, and PDF output. When selected the pages in the stream will be rotated 180 degrees. When used with AFP, the rotation value you specified in the content stamp definition will be ignored.

Log Font Information

Adds font information to your log file. The font information is generated at the Output Stream level. xPression reports the font name that was used, the location of the font, and the font type. For AFP fonts, xPression also reports the code page and character set. For PCL fonts, xPression also reports the font file name, font typeface, font subset, font pitch, and truetype font name. Font information is not reported for HTML output. The font information for batch jobs appears in the job log. Font information for transactional processes appear in the xPression.log file. For more information, see *Administering the xPression Server*.

Force New Sheet for Media Marker if in Duplex

Forces a new recto page to be add to the output in cases where a media marker should be applied to a new page.

Sorting

The Sorting table enables you to sort your output by any output variable. xPression sorts documents in the output stream based on output variables. You select which output variables you want to sort by adding them to the sorting list. Using output variables, you can sort documents according to the customer's ID, by the size of their account, or by any piece of data that resides in your customer data source.

For example, you could sort the documents in an output stream first in descending order by Date and then in ascending order by CustomerID. This would produce a stream where the most recent documents with the lowest CustomerID are output first.

You can sort with up to 10 output variables for each stream. You can also sort documents in ascending or descending order and change the sort order by moving items up and down the list.

Note: xPression does not support sorting the data in the secondary tables of the customer data file.

To define the sort order for documents in an output stream:

1. Access the Output Stream General tab by creating a new output stream or clicking an output stream name from the Output Stream: List page. The sorting table is located in the middle of the page.
2. Click **Add** to create a new sorting row.
3. From the Output Variable list, select an output variable that you would like to use to sort the documents in the output stream.
4. From the Order list, select the direction of the sort. You can choose **Ascending** or **Descending**.
5. To move a sort row to a higher or lower position, select the sort row check box and click **Move Up** or **Move Down**.
6. Click **Save** when finished.

Grouping

The Grouping section enables you to group together documents that share a definable attribute. To ensure that documents belonging to the same customer are designated as part of the same print package, you must use sorting in conjunction with grouping, unless your data has been presorted.

You should presort your data if have very large XML data sources. In some cases, sorting could not be completed when very large data files were used. Presorting your data, and using the "Allow grouping without sorting" option here, and the "Preserve input data sort order" option on the job definition prevents sorting failures under these conditions. For more information, see the *xDashboard User Guide*. If your data is presorted, ensure that you do not have any sorting criteria defined for the stream.

If you are performing sorting on your stream, you can group documents together based on one of the output variables you defined as sort criteria.

Grouping documents makes them part of the same "package". A package is a collection of documents "packaged" as a unit for output processing and sent to your print device by the emitter. Typically, the final package contains the deliverables for one customer. Selecting **<none>** indicates that one group per customer record will be created, or one document per package.

Note:

- A package will not be broken by partitioning or page count limitations.
- If you are using the **Allow grouping without sorting** option because your date is presorted, make sure you also select the **Preserve input data sort order** option for the job definition.
- xPression does not support grouping the data in the secondary tables of the customer data file.

To group your documents:

1. Access the Output Stream General tab by creating a new output stream or clicking an output stream name from the Output Stream: List page. The Grouping section is located under the sorting table.
2. (Optional) Select the **Allow grouping without sorting** check box to only group the documents, and not sort them as well. If you select this option, ensure that all sorting conditions are removed from the stream definition.

3. Select an output variable from the list. Selecting **<none>** indicates that one group per customer record will be created, or one document per package.

   The output stream instructs xPression to begin and end a print package based on the changes in this variable. For example, if your stream is grouped by CustomerID, xPression ends and starts a new package each time a CustomerID changes.

4. Select the **Begin each document on an odd/recto page when in duplex (a blank page may be inserted)** check box to ensure that each new document created by grouping begins on a odd page.

   This feature will not place a blank page between two different media markers because xPression assumes the Printer will naturally insert a blank page when using different paper trays.

   As a result, system variables that report page numbers may provide incorrect page counts.

5. Click **Save** when finished.

Note: When grouping is enabled, all documents included in one package are considered a single entity. Variable rules and output variables defined within individual documents can no longer be addressed at a document level.

Inclusion Condition

An inclusion condition is a Boolean equation comprised of user fields, system functions, string and numeric literals, and operators that compare the attributes of a document with a set of conditions defined by you. If the attributes match, xPression includes the document in the output stream.

In the Inclusion Condition section, define inclusion condition criteria to determine whether or not a document belongs to this stream. For example, this condition might be set to include all documents that include a check because those documents require special processing, or it may include documents whose total number of pages is above or below a set amount.

Inclusion conditions can be made up of static, hard-coded values (literals), data from your customer data source (output variables), and system-generated calculations (built-in functions). All of these data elements are available in the Expression Editor. Clicking the **browse** button opens the Expression Editor. For more information, see Working with the Expression Editor, page 31.

Inclusion conditions can be made up of a single data row, or multiple data rows. An example of a single data row condition would be a comparison between an output variable and a literal text field. For example, a condition that includes all documents where the Cor_Method output variable maps to a customer data record whose value equals e-mail (the literal text field).

For this example, your expression would appear like this:

```
COR_METHOD = "email"
```

An example of a multiple data row inclusion condition would be the specification of two conditions (each containing a function, an operator, and a literal value), where one or both of the conditions must be met. For example, a condition that includes all documents where the total pages in the package exceed 100 or the total paper thickness exceeds 10 mm. This inclusion condition will determine what goes into an output package. This condition specifies that no package can be larger than 10 mm total, or cannot have more than 100 pages. If the documents exceed these values, a second package will be created, but will conform to the same restrictions. For this example, your expression would appear like this:

```
TotalPagesInPackage > "100" || TotalPackageThickness > "10"
```

Note: Paper weight and thickness are 0 by default. If you are using either paper weight or thickness in your inclusion condition you must set the value(s) to the actual weight and thickness in the Paper Tray Information section of the Print Device Settings, page 245 or the resulting total value will always be 0.

Output Stream Marker Tab Options

The Marker tab contains a list of all currently defined marker definitions. To add a marker to the current output stream, select the check box next to the marker definition name. The marker you define here is the "Startup" marker for the documents in the stream. See Startup Markers, page 156 for more information. You can apply more than one marker in an output stream. Click **Save** when completed.

Note: Because of processing logic, if you select a media marker as a startup marker, any media count information from that marker may be incorrect. For accurate media counts, only place media markers at the beginning of a document. For more information, see Paper Stock Accounting, page 158.

Output Stream Content Stamp Tab Options

The Content Stamp tab enables you to add one or more content stamps to your output stream. To add a content stamp, click **Add**.

Select your content stamp from the drop-down list. The Content Stamp list is populated with the name of all existing content stamp definitions. Click **Save** when finished.

Output Stream Crop Marks Tab Options

Crop marks are crossed lines placed at the corners of a page to indicate where the sheet should be cut. They are necessary when the trim size of the page and the sheet size are not the same. They can tell the operator of an offline cutter where to trim a sheet to end up with the correct final page size. Crop marks are often used when creating documents with bleeds, or impositions.

xPublish enables you to add crop marks to all pages in an stream through an output stream definition. To add crop marks, select the **Include crop marks** option.

When you click Include crop marks, the following options appear.

Element Name	Description
Offset from page	Type the offset in points from the edge of the page that you want the crop marks to appear, or leave the default value.
Length of crop mark	Type the length of the crop marks in points, or leave the default value.
Width of crop mark	Type the width of the crop marks in points, or leave the default value.
Show trim box	A trim box strokes the edge of the logical page. Crop marks are typically six points offset from the page, so they never touch the crop marks.

Output Stream Separator Sheet Tab Options

The Separator Sheet tab enables you to add separator sheet definitions to the output stream. To add separator sheets, select a separator sheet from the list. This list is populated by all existing separator sheet definitions on your system.

Output Stream Postal Processing Tab Options

The Postal Processing tab enables you to add a postal processing definition to the output stream. To add a postal processing definition, select a definition from the drop-down list. This list is populated by all existing postal processing definitions on your system. For more information, see Postal Processing Definitions, page 194.

When an output profile uses more than one output stream configured for Postal Processing, ensure that each stream uses a separate Postal Processing definition. If two streams are configured to use the same Postal Processing definition, they will both use the same input and output from the postal processing system. This means that the streams will incorrectly read information from both streams, causing unpredictable results.

Working with Multiple Inclusion Conditions

You can perform a calculation (for example, addition, subtraction, or greater than/less than) on multiple inclusion conditions within the same expression, or you can use the AND/OR designation to determine if all or some of the inclusion conditions must be met to satisfy the condition. We will demonstrate these situations with a couple of examples.

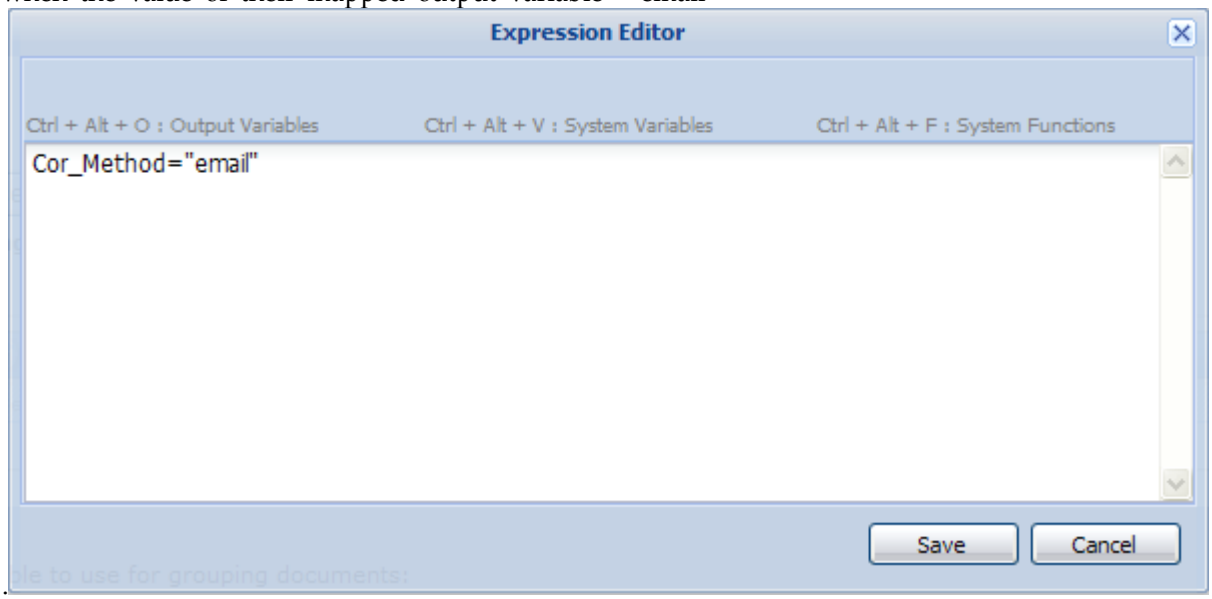
Using Inclusion Conditions as Equations

In this example we will create an inclusion condition to include documents in the output stream when the customer's preferred method of correspondence is e-mail.

First, your customer data must contain a field where the customer's preferred method of correspondence is expressed. Create an output variable for this field and add it to your inclusion condition by clicking **Ctrl+Alt+O**, and then selecting the variable.

Type an equal sign (=), then type a literal value (in quotes) that matches what is represented in your data source for e-mail correspondence.

This inclusion condition allows all documents into the stream when the value of their mapped output variable = email

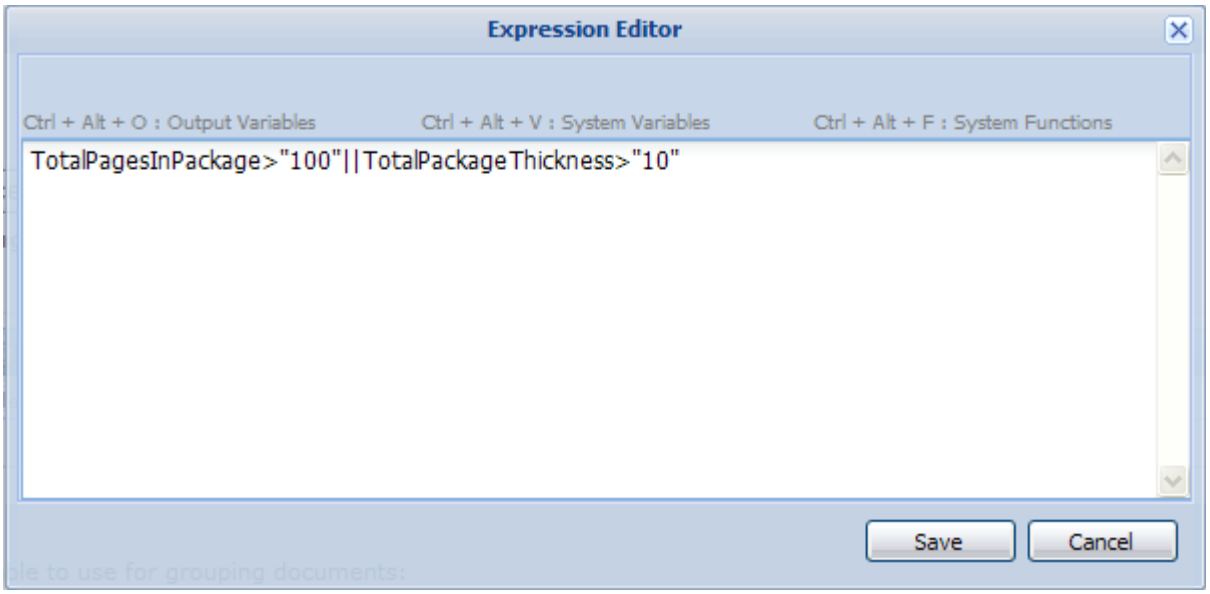

Expression Editor
Ctrl + Alt + O : Output Variables
Ctrl + Alt + V : System Variables
Ctrl + Alt + F : System Functions
Cor_Method="email"
Save
Cancel

Using AND/OR Criteria in Your Inclusion Conditions

This example shows an inclusion condition using AND/OR criteria with two built-in functions. This scenario includes documents in the stream if the total pages in the package exceed 100 or the total height of the package exceeds 10mm. To create this scenario, create the following two expressions and select OR (||) as the data operator:

Total Pages in Package is greater than 100

Total Paper Thickness of Package is greater than 10mm


Expression Editor
Ctrl + Alt + O : Output Variables
Ctrl + Alt + V : System Variables
Ctrl + Alt + F : System Functions
TotalPagesInPackage>"100"||TotalPackageThickness>"10"
Save
Cancel

Distribution Definitions

An xPublish distribution definition defines settings for operating a specific e-mail server, print output device, or archive system. You must create a distribution definition for each distribution method you intend to use.

The Distribution Options tab contains settings specific to your output device.

Distribution Option	Settings
For e-mail Servers	E-mail SMTP server location and name, and e-mail format settings.
For Print Devices	Output directory, output file name, and printer script information.
For Archive Systems	Settings specific to your archive system. Supported archive systems are: Documentum, FileNet Capture, FileNet HPII/MRII, DocFinity Imaging, IBM OnDemand Generic Indexing.

xPublish Distribution Definition: List Options

You access the distribution definition page by clicking Distribution Definitions from the xPublish Output Management page. You can select an existing distribution definition or create a new one from this page. This page contains the following elements.

Element Name	Description
Add Button	Enables you to create a new Distribution Definition. For instructions, see xPublish Distribution Definition: List Options, page 244, xPublish Distribution Modes, page 263, and Print Device Settings, page 245.
Copy	To create a duplicate item , select the item you want to copy and click **Copy**. The duplicate item appears in the list with the words “Copy of” placed before the original name.
Delete	To delete an existing item, select the item you want to remove and click **Delete**.
Distribution Definition Name List	To edit the settings of an existing item, click the item name. xAdmin comes with a built-in Distribution Definition called “Return to Caller”. You cannot edit the Distribution Options for this built-in definition, but you can create new Distribution Definitions that use the Return to Caller feature. The built-in Return to Caller definition does not return document metadata.

Creating a Distribution Definition

To create a Distribution Definition:

1. From the Distribution Definition list, click **Add**.
2. Type a name for the distribution definition. The name can be 255 alphanumeric characters in length. You cannot give your xPublish distribution definition the same name as an existing CompuSet distribution definition. xPression will display an error message at the top of the page that the name is already in use.
3. Select a Distribution Mode. For an explanation of the Distribution Modes, see xPublish Distribution Modes, page 263.
4. To define the type of output the Distribution Definition will handle, click **Distribution Options**. If you selected Immediate or Queue for Batch, you can create Print, E-mail, or Archive Distribution Definitions.
   - To create a Print Distribution Definition, see Print Device Settings, page 245.
   - To create an E-mail Distribution Definition, see E-mail Device Settings, page 248.
   - To create an Archive Distribution Definition, see Archive Device Settings, page 252

   If you selected Return to Caller, see Return to Caller Distribution Definitions, page 262.

Print Device Settings

To view the print device settings, click the Distribution Options tab and select **Print** from the Device Type list. This page contains the following elements:

- Partition Print Output By: Single print file for all customers, page 245
- Partition Print Output By: Print files of maximum number of sheets equal to, page 246
- Partition Print Output By: Individual print file for each customer, page 246
- Partition Print Output By: Print files of document attribute, page 246
- Output Notes, page 246
- Output Directory for Print Files, page 246
- Name and location of Print Script, page 247
- Print Script Parameters, page 248
- Generic Index, page 248

Partition Print Output By: Single print file for all customers

xPression creates one large print file for all customers. When using this option, you must ensure that the EnableSubstream parameter is disabled in xPressionPublish.properties.

The xPression emitters can process multiple streams of documents concurrently when EnableSubstream is activated. However, this feature also causes the xPression emitter to create multiple output files, one for each stream. The emitter will create multiple output files even when Single print file for all customers is selected. xPressionPublish.properties is located in xPression installation directory on the application server. To disable or enable this feature set: EnableSubstream=false.

Partition Print Output By: Print files of maximum number of sheets equal to

If you want to limit the size of your output print file, select this option and enter the maximum number of sheets your partition can hold.

In some cases sorting and grouping can cause the sheet count to increase and exceed the maximum sheet count. This will result in an error and possible failure of some applications. The error message will include sufficient information to adjust the Maximum Sheet Count limit and avoid the error condition.

Partition Print Output By: Individual print file for each customer

For this option, xPression creates a separate print file for each customer.

Partition Print Output By: Print files of document attribute

This option will start a new partition each time there is a change in the selected output variable. For example, if you set up an output variable based on the customer's zip code, xPression will create a new partition each time it encounters a new zip code.

Output Notes

This option is available only when Individual print file for each customer is selected.

Notes are published when this action is selected in the Distribution Definition. The selection is made in xAdmin on the Distribution Options tab of the Distribution Definition page in xPublish Output Management. To output notes when the document is published, select Output Notes.

Output Directory for Print Files

This is optional if you use a single print file for all customers and required if you chose to define the maximum number of sheets for your partitions in the Partition Print Output By section.

This is the directory that holds output files created by partitioning. Do not include output filename in this box. You must end your definition with a backslash (\) if the directory is on a Windows server, or a forward slash (/) if the directory is on a UNIX server.

If left blank, xPression automatically places the file in the /xPression/Publish/Output/ directory in your xPression Server installation directory. The directory you define must already exist as xPression will not create it for you.

Print File Naming Convention

Define a naming convention for the output files created from this distribution definition. If your distribution definition only creates one output file, you can use a simple filename. You must use a counter if your distribution definition creates more than one output file. If you fail to use a counter, xPression will overwrite your output file each time it processes a record.

To define your print file naming convention, you can do the following:

- **Add Literal.** This option enables you to type a literal, hard-coded value in the print file name.
- **Add Variable.** This option enables you to add an output variable, BatchParameter or Date function to the print file name. An output variable will supply data from your customer data source for each customer record you process.

  If you selected 'Single print file for all customers' above, you will only be able to insert a BatchParameter with this button. A BatchParameter enables you to add the Batch Parameter variable to your report file name. This provides a placeholder in the file name for text you manually enter while invoking the batch job from the command line. See the documentation for the -n batch parameter in Running Batch From a Command Line.

  You define the BatchParameter identifier when you execute your batch job. Please see the *xDashboard User Guide* for more information about defining the identifier for your batch parameter.

  Note: Using variables in file names is not supported if you are using imposition in the output.
- **Add Counter.** This option is not available for "Single print file for all customers". This option adds a three digit counter to the print file name. Do not use this option if SubStreamNumber in xPressionPublish.properties is greater than 1.

  When Add Counter is used in conjunction with a SubStreamNumber value greater than 1, no output will be produced and the error message "ErrorMessage : {COUNTER} variable is prohibited to use under batch mode when substream is enabled." will be written to the log file.
- **Delete.** Select the naming convention to remove and click Delete.

You can not use the dollar sign ($) symbol as part of the filename. Do not enter a filename extension in this box, the extension is added automatically based on the format used in the output profile.

Name and location of Print Script

This setting is optional. Specify the name and location of the script or program you use to send output to specific printers. xPression runs this script or program after each output file is created. This script can be any file that is executable by the operating system.

For Windows systems, you can define a batch script (.bat) or executable (.exe). Ensure that the script begins with @ECHO OFF for best results. For UNIX systems, you can define an executable shell script or program.

When using the Print command, the "%1" parameter must be enclosed in double quotes. For example:

```
print /D:\\cnbj2fp1\XeroxPrinter "%1"
```

Type the fully qualified path for your print script.Some AIX commands may not process correctly when contained in a print script. The AIX lp and cp commands are known to run correctly in a print script.

Print Script Parameters

(Optional) This option enables you to pass parameters to your print scripts. These parameters enable you to write logic into your scripts based on the value of the parameters. You can define parameters using literal or variable values. These will always come to the script as %2, %3, and %4. %1 is reserved for the print file name.

Generic Index

This feature enables you to create an XML formatted index that lists values for all defined output variables in the output stream, and, optionally, media counts. The index is formatted to three levels, Partition, Package, and Document. When activated, xPression creates the index each time the batch job is run. The index is saved to the same directory where your output file is stored.

When you select this option, you must define a file name for the generic index and select which output variables you want include in the index.

If you want to include media counts in the file, select the levels you want reported. Counts will be listed in the XML file by the marker name, in a <MediaCountInfo> section. At the stream level, there is also a list of all markers and information about them, including name, description, and features. For more information, see Paper Stock Accounting, page 158.

E-mail Device Settings

To view the settings for an E-mail device, select **E-mail** from the Device Type list. Configure the available settings according to your requirements. If you are using E-mail Distribution Definitions, ensure you see the following two sections for important information: Suggested Maintenance for E-Mail, page 252 and Important Information About CSS Support, page 252.

For an E-mail Distribution Definition, you can define the following settings:

- E-Mail Address and Subject Settings, page 249
- Return Path, page 249
- Subject, page 250
- Custom Field, page 250
- Message, page 250
- Attachment, page 250
- Send As, page 250
- SMTP Server, page 251
- Create XML for Mass Mailings, page 251
- Generic Index, page 251

E-Mail Address and Subject Settings

You can supply values for the following standard E-mail fields:

- TO
- CC
- BCC
- From
- Reply To
- Subject

For each of these fields, you can supply a literal or variable value. The value you supply will appear in the corresponding field in the output E-mail.

If you want to supply a variable value for a field, the **Add Variable** button enables you to select an existing Output Variable from the list. For the TO, CC, BCC, From, and Reply To fields, ensure your Output Variable is mapped to a field in your data source that contains E-mail addresses.

You can also use **Add Literal** to supply a literal value for this parameter by manually typing the E-mail address or Subject content in the provided box.

You can supply an E-mail address with additional text to all the E-mail fields. Simply place the E-mail address in brackets as follows:

```
Text [email]
```

For example:

```
Home Office Email [customer@customer.com]
```

Return Path

This field enables you to supply a return address that is different from what is defined in the “From” field. The Return Path field places the information in the “envelope” portion of the E-Mail, not the message body. You can supply a literal or variable value.

If you want to supply a variable value for a field, the **Add Variable** button enables you to select an existing Output Variable from the list. For the TO, CC, BCC, From, and Reply To fields, ensure your Output Variable is mapped to a field in your data source that contains E-mail addresses.

You can also use **Add Literal** to supply a literal value for this parameter by manually typing the E-mail address or Subject content in the provided box.

You can supply an E-mail address with additional text to all the E-mail fields. Simply place the E-mail address in brackets as follows:

```
Text [email]
```

For example:

```
Home Office Email [customer@customer.com]
```

Subject

See E-Mail Address and Subject Settings, page 249.

Custom Field

You can add custom fields to your E-mail. Custom fields are added to the E-Mail body.

Click **Add** to add row for a custom field. Type a name for the field, and then click the browse button to open the Expression Editor where you can define an expression to supply data to the field. For more information, see Working with the Expression Editor, page 31.

You can supply an E-mail address with additional text by placing the E-mail address in brackets as follows:

```
Text [email]
```

For example:

```
Home Office Email [customer@customer.com]
```

Message

This information appears in the body of the e-mail. You can get this value from your data source by using **Add Variable** to define and map an output variable to a field in your data source that contains this information. You can also use **Add Literal** to supply a literal value for this parameter by manually typing the message. You can format the message text with line returns and blank lines if necessary. If the message requires a blank line at the beginning, you must enter a space on the blank line to save it.

Attachment

This button enables you to select an existing attachment from your attachment directory. The attachment directory is defined in your xPressionPublish.properties file located in your xPressionHome directory. When you click this button, xPublish creates a new row that contains a drop-down list. The drop-down list displays the contents of the attachment directory. Select an attachment from this list. See *Administering the xPression Server* for more information.

The total length of the attachment filename and path cannot exceed 255 characters. An error will occur if the path and filename length exceeds this limit.

Send As

Select either **Include document as attachment**, or **Include document in message body**. Including the document as an attachment sends the document as an attachment in PDF form. Including the document in the message body sends the document in HTML format in the message body.

If you are including the document as an attachment, you must supply a naming convention for the attached file. You can include the Date function in the attachment file name. You can not use the dollar sign ($) symbol as part of the filename. Do not enter a filename extension in this box, the extension is added automatically based on the format used in the output profile.

This section also contains the **`Maximum temporary files for single folder`** option. When running a job that sends E-mail output, xPression creates HTML temporary files in the xPression temp folder. When xPression processes a large job, the large amount of temporary files created can slow down performance. This option controls the maximum number of temporary files that can be written to a single folder. When xPression reaches the limit, it creates an additional folder. Simply type a value in the provided box and save the Distribution Definition.

SMTP Server

Supply the name of your SMTP server. Leave the default value, or type a new one. This option is required, and can not be blank. The port number for your SMTP server is defined in the DistributionController.properties file located in your xPressionHome directory.You can specify different SMTP servers for each E-mail Distribution Definition. However, there is no way to specify additional port numbers. Each SMTP server must use the same port number defined in the DistributionController.properties file located in your xPressionHome directory.

Create XML for Mass Mailings

This option only works when publishing xPresso for Dreamweaver packages. When this option is selected, xPublish creates one large XML file that contains all the e-mail header information and all the HTML included in the e-mail. If you are using a bulk mail server for your correspondence e-mail communications, you can send this XML file to your bulk mail server. The XML is saved to your temp directory as defined in the xPressionPublish.properties file located in your xPressionHome directory.

Generic Index

This feature enables you to create an XML formatted index that lists values for all defined output variables in the output stream, and, optionally, media counts. The index is formatted to three levels, Partition, Package, and Document. When activated, xPression creates the index each time the batch job is run. The index is saved to the same directory where your output file is stored.

When you select this option, you must define a file name for the generic index and select which output variables you want include in the index.

If you want to include media counts in the file, select the levels you want reported. Counts will be listed in the XML file by the marker name, in a <MediaCountInfo> section. At the stream level, there is also a list of all markers and information about them, including name, description, and features. For more information, see Paper Stock Accounting, page 158.

Suggested Maintenance for E-Mail

When you produce e-mail output, the output files are automatically saved in the \xPression\Publish\temp folder so xPression can unpack the MSOHTML. xPression doesn't automatically delete these files unless the distribution is successful; therefore, the temp folder should be cleaned out periodically to avoid it becoming too large.

Important Information About CSS Support

xPression distributes E-mail in HTML format and relies on CSS (Cascading Style Sheets). When viewed in E-mail clients without support for CSS some hidden text will be shown. Information about CSS support is freely available, Guide to CSS support in email for example, provides details on which elements are supported in the most popular E-mail clients. A search for "CSS Support" should return other resources on this topic. Specific examples of E-mail clients that do not support CSS are Google GMail and earlier versions of Lotus Notes. It is possible that E-mail clients that support CSS can remove that support, that new E-mail clients can be introduced, and that E-mail clients that do not currently support CSS will provide support in the future. It is not possible to provide current information in this document, so please refer to information from the E-mail client producer for specific information.

Archive Device Settings

You can create an Archive Distribution Definition for the following Archive types:

- Documentum Distribution Options Tab Options, page 252
- FileNet Capture Distribution Options Tab Options, page 255
- FileNet HPII/MRII Distribution Options Tab Settings, page 256
- DocFinity Imaging Distribution Options Tab Options, page 258
- IBM OnDemand Generic Indexing Distribution Options Tab Options, page 259
- Creating a Documentum Distribution Definition, page 261

Documentum Distribution Options Tab Options

To access the Documentum archive distribution options, create or edit a Distribution Definition and click the Distribution Options tab. To archive output in the Microsoft Word format, you must manually add the following formats to Documentum:

- DOC format for Microsoft Word 2003 output
- DOCX for Microsoft Word 2007 and 2010 output

See the *xPression Installation Guide* or your Documentum Administrator documentation for instructions on creating formats. This page contains the following elements.

Element Name	Description
Printer Type	Ensure you select **Archive**.
Archive Format	Ensure you select **Documentum**.
Temporary Location	Before archiving your output to a Documentum DocBase, xPression must first create the file at a temporary location on your local computer. The Temporary Location table enables you to define the temporary location using Literal values, Variable values, counters, or any combination of these values. • When you click Add Liberal, a text box appears that enables you to type a value. • When you click Add Variable, a drop-down list appears that enables you to select a pre-defined output variable. • When you click Add Counter, xPression adds a single digit (1–9) counter to the archive name. If you require a two digit counter, you must add tow counter functions to the naming convention. xPression can create this location dynamically.
ECM Configuration	Select the ECM configuration that connects to the DocBase where you want to archive your output.
DocBase Output Path	Use the Literal, Variable, and Counter functions to define the path to a directory in your DocBase. This directory will store all output from this Distribution Definition. If the directory you define does not exist, xPression will create it for you. • When you click Add Liberal, a text box appears that enables you to type a value. • When you click Add Variable, a drop-down list appears that enables you to select a pre-defined output variable. • When you click Add Counter, xPression adds a single digit (1–9) counter to the archive name. If you require a two digit counter, you must add tow counter functions to the naming convention.
Object Name	Every asset stored in the Documentum Docbase is stored as an object. Use the Literal, Variable, and Counter functions to define the name of the object (your output file) as it will appear in the Documentum DocBase. The object name must contain only English characters. • When you click Add Liberal, a text box appears that enables you to type a value. • When you click Add Variable, a drop-down list appears that enables you to select a pre-defined output variable. • When you click Add Counter, xPression adds a single digit (1–9) counter to the archive name. If you require a two digit counter, you must add tow counter functions to the naming convention.

Element Name	Description
Object Type	Documentum objects are defined by their object type. Each object type has its own set of attributes that can be defined by the user or are inherited. Because xPression archive output is stored as an object in the Documentum Docbase, you must define an object type for your archive output. Select an existing Documentum object type from the Object Type drop-down list. This list will contain object types associated with the dm_document type. If the selected object type contains attributes that can be configured by the user, those attribute names will appear below in the Object Attributes Mapping list. The Object Type list is retrieved from the Documentum repository. It is possible for incompatible object types to be on the list, and if the selected object type is incompatible an exception will occur. So ensure that the correct object type is selected. The type selected here must match the Type selection in your process as defined in the Process Properties Data tab. Refer to the *xPression Installation Guide* for details.
Start Process	Select this check box if you want your output to start a Documentum workflow process. When you select this option, the Attach to Process option appears.
Attach to Process	This list displays custom workflow processes on your Documentum system. When you select a process from the list, xPression will attach your output to the select process. The value in this list are associated with the object type. If the process you select has multiple package types, the 'Package Type list appears. A Process can only appear in this list if you have defined a Package to this process in Process Builder. The package defined in Process Builder must match the Object Type defined above.
Package Type	This list appears if the process you select in the Attach to Process list contains multiple package types. Select the correct package type from the list.
Object Attributes Mapping	This list shows any mappable attributes associated with the selected object type. The list shows the attribute name and data type. You can map these attributes to existing xPression output variables, literal values, or in the case of the acl_name attribute, a Documentum value. The attribute named acl_name can only be mapped to a value that is retrieved from the Documentum system. The valid values appear in a drop-down list for acl_name. The value for this attribute is associated with the object type. For all other object variables, you can select Variable or Literal. • When you select Variable, a drop-down list appears. Select an output variable from the list. Ensure that the output variable is of the same data type as the object type attribute. • When you select Literal, a text box appears. Type your literal value in the text box.

Element Name	Description
	If you have required inherited attributes that do not appear in this list by default, you can choose to display all inherited attributes by selecting the Load inherited attributes check box.

For instruction on how to create a Documentum Distribution Definition, see Creating a Documentum Distribution Definition, page 261.

Archiving AFP Output

The Documentum Content Server only archives formats that are recognized by the server. By default, AFP is not recognized. To archive AFP output, you must create a format object for AFP in the repository. Please see your Documentum documentation for instructions on creating Documentum Format Objects for file formats.

FileNet Capture Distribution Options Tab Options

Select **FileNet Capture** from the Archiving Format list to view the archive system settings. This archive format can only accept PDF output from xPression. For this reason, when adding a FileNet Capture distribution definition to an output profile, you may only use it in conjunction with a PDF format definition.

Define the following settings for a FileNet Capture distribution definition.

Element Name	Description
Printer Type	Ensure you select **Archive**.
Archive Format	Ensure you select **FileNet Capture**.
Output Directory for Archive Files	This is the directory that holds output files created by partitioning. The default output directory is C:\xPression\Publish\Output
Archive File Naming Convention	This can be a simple filename only if one file is produced. Otherwise, use a more complex naming scheme utilizing the Add Variable and Add counter functions Click **Add Counter** to produce a numbered count. If there is no partitioning, the partition number is always 1. Click **Add Variable** to use values defined in your output variables.

Element Name	Description
Extension of Index File	The extension for the original index file. By default, xPression sets your index extension to **.fna,** but you are free to set it to any extension that your archiving system may require**.**
Index Keys and Values	Define the archive index keys and values with literal values, output variables, and built-in functions. Click the **browse** button next to each entry box to open the Expression Editor, where you can create an expression to define the index keys. For more information, see Working with the Expression Editor, page 31. Note that when the preview displays “Preview:AA” it does not indicate that only two characters will be written to the index file. The entire output variable is written to the file.

FileNet HPII/MRII Distribution Options Tab Settings

Select **FileNet HPII/MRII** from the Archive Format list to view the archive system settings. This archive format can only accept PDF output from xPression. For this reason, when adding a FileNet HPII/MRII distribution definition to an output profile, you may only use it in conjunction with a PDF format definition.

The FileNet HPII/MRII page contains the following elements.

Setting	Definition
Printer Type	Ensure you select **Archive**.
Archive Format	Ensure you select **FileNet HPII/MRII**.
Output Directory for Archive Files	This is the directory that holds output files created by partitioning. The default output directory is C:\xPression\Publish\Output#\ This format requires pre-made directories. Create the output directories you need in advance and xPression will fill them. Notice that the output directory contains a pound sign (#) at the end of the path. The pound sign tells xPression how many output directories it has to fill. One pound sign gives you ten directories 0-9. Two pound signs gives you 20 directories, 0-19. For example, if you used one pound sign, xPression would expect to find the following directories in the path: \output0\ \output1\ \output2\

Setting	Definition
	\output3\ ... \output9\
Archive File Naming Convention	This can be a simple filename only if one file is produced. Otherwise, use a more complex naming scheme utilizing the Add Literal, Add Variable, and Add counter functions. **Add Literal** enables you to add a literal string to the archive file name. **Add Counter** produces a numbered count. If there is no partitioning, the partition number is always 1. **Add Variable** enables you to use values defined in your output variables. Select an output variable from the drop-down list.
Document Class	Provide the FileNet class code. You can provide a literal value, or select a variable. If you use a literal value, the default is 1, and the value must fall between 1 and 99. If you use a variable, select the variable from the list and set the number of characters to be used. In either case, the value must be numeric.
Field Delimiter	Sets the major delimiter in the transact.dat file. The character must be a punctuation or special character; it may not be alphanumeric. Default is a colon (:). See your FileNet documentation for more information.
Item Delimiter	Sets the minor delimiter in the transact.dat file. The character must be a punctuation or special character; it may not be alphanumeric. Default is a comma (,). See your FileNet documentation for more information.
Files Per Directory	By default up to 1000 files are added to a directory before creating a new one. Use this option to set the number of files placed in the directory to a different value. If left blank, the default value of 1000 is used.
Index Keys and Values	Define the archive index keys and values with literal values, output variables, and built-in functions. Click the **browse** button next to each entry box to open the Expression Editor, where you can create an expression to define the index keys. For more information, see Working with the Expression Editor, page 31. Note that when the preview displays “Preview:AA” it does not indicate that only two characters will be written to the index file. The entire output variable is written to the file.

Note: When creating an EOB file that contains statistics for doc_count and page_count, xPression will count a multi-page TIFF or multi-page PDF image as a single document and a single page. These variables do not count individual TIFF images.

DocFinity Imaging Distribution Options Tab Options

Select **DocFinity** from the Archive Format list to view the archive system settings. This archive format can only accept PDF output from xPression. For this reason, when adding a DocFinity Imaging distribution definition to an output profile, you may only use it in conjunction with a PDF format definition.

This page contains the following elements.

Element Name	Description
Printer Type	Ensure you select **Archive**.
Archive Format	Ensure you select **DocFinity**.
Output Directory for Archive Files	This is the directory that holds output files created by partitioning. Default Output directory = c:\xpression\publish\output
Archive File Naming Convention	This can be a simple filename only if one file is produced. Otherwise, use a more complex naming scheme utilizing the Add Variable and Add Literal functions. Click **Add Variable** to use values defined in your output variables.
Index File Name	The name of the index file.
Individual Index file for each output file (will prefix with same name)	Ensures that your index file is not overwritten by subsequent records in your batch run. When selected, xPression will do two things: • Create one index file for each output file. • Give each index file the same name as the output file, and will also append to the end of the index file name any text that appears in the Index File Name box. For example, if your output file name is “Auto_Policies” and you type “Index” in the Index File Name box, the index file name will be Auto_PoliciesIndex. xPression also appends your chosen suffix to the end of the file name.
Extension of Index File	The extension for the original index file. By default, xPression sets your index extension to **.ind,** but you are free to set it to any extension that your archiving system may require.

Element Name	Description
Final Windows Destination Directory	If you are running xPression on an operating system other than Windows, you will need to copy all of the output PDF files from your output directory to a Windows directory so that your archiving system can access them. Define the name of this Windows directory here. xPression uses this information to update the paths in your index file.
Index Keys and Values	Define the archive index keys and values with literal values, output variables, and built-in functions. Click the **browse** button next to each entry box to open the Expression Editor, where you can create an expression to define the index keys. For more information, see Working with the Expression Editor, page 31. Index key number six is defined automatically by xPression. This key contains the full path and output file produced by this output type. Note that when the preview displays “Preview:AA” it does not indicate that only two characters will be written to the index file. The entire output variable is written to the file.

IBM OnDemand Generic Indexing Distribution Options Tab Options

Select **IBM OnDemand Generic Indexing** from the Archive Format list to view the archive settings. This archive format can only accept PDF output from xPression. For this reason, when adding a IBM OnDemand Generic Indexing distribution definition to an output profile, you may only use it in conjunction with a PDF format definition. This page contains the following elements.

Element Name	Description
Printer Type	Ensure you select **Archive**.
Archive Format	Ensure you select **IBM OnDemand Generic Indexing**.
Index	Choose Concatenated or Individual files. **Concatenated** creates a single concatenated PDF archive file. With each run, xPression appends index information to the end of the original archive index file. **Individual files** creates one archive file each time the distribution definition is executed. When using this setting, xPression enables you to use a counter in the archive file name to prevent overwriting older archive files.
Output Directory for Archive Files	This is the directory that holds output files created by partitioning. Default Output directory = c:\xpression\publish\output

Element Name	Description
Archive File Naming Convention	This can be a simple filename only if one file is produced. Otherwise, use a more complex naming scheme utilizing the Add Literal, Add Variable and Add Counter functions. Click **Add Literal** to add hard-coded literal values. Click **Add Variable** to add values defined in your output variables. The **Add Counter** function adds a 1-9 counter. If you require a two digit counter, you must add two counter functions to the naming convention.
Index File Name	Type a name for your index file.
Extension of Index File	There is no default extension for the original index file. You are free to set it to any extension that your archiving system may require.
Separator	IBM requires that the expressions in your index follow this format: `{Name}{Separator}{Value}` The Separator is a 1-3 character length string that separates a literal name from a value in the index. A common default separator is the following two-character string `:=` The {Name} is a literal name that you would use to describe a value. For example, "FirstName" or "AccountNumber". The {Value} is a Literal, Variable, or Function that you use to supply a value to the index. Supply a 1-3 character separator in the Separator box. xPression will automatically place your separator between your literal name and the value. You define these expressions in the Index Keys and Values section described below.
Final Windows Destination Directory	If you are running xPression on a non-Windows system, you will need to copy all of the output PDF files from your output directory to a Windows directory so that your archiving system can access them. Define the name of this Windows directory here. xPression uses this information to update the paths in your index file.

Element Name	Description
Code Page	(Optional) You can specify the code page of the input data from this field. You can define any code page that is between three and five characters in length. The default code page is 858 for Windows machines and 1140 for mainframe systems.
Index Keys and Values	IBM requires that Index keys use the following format: **`{Name}{Separator}{Value}`** The {Name} is a literal name that you would use to describe a value. For example, "FirstName" or "AccountNumber". The {Value} is a Literal, Variable, or Function that you use to supply a value to the index. When using an output variable, ensure you use the following syntax: {$variableName}. The Separator is a 1-3 character length string that separates a literal name from a value in the index. A common default separator is the following two-character string **`:=`** Click the **browse** button next to each entry box to open the Expression Editor, where you can create an expression to define the index keys. For more information, see Working with the Expression Editor, page 31. For some index key examples, see Index Keys and Values Example, page 261. Note that when the preview displays “Preview:AA” it does not indicate that only two characters will be written to the index file. The entire output variable is written to the file.

Index Keys and Values Example

IBM Requires the following format for index keys: {Name} {Separator} {Value}

In the following two examples, the {Value} is provided by output variables that supply the value from a field in your customer data.

```
"FirstName"+":="+Fname
```

```
"AccountNumber"+":="+AcctNum
```

In this example, the Value is provided by the TotalPagesinPackage Built-in Function.

```
"TotalPages"+":="+TotalPagesinPackage
```

Creating a Documentum Distribution Definition

To create an archive Distribution Definition for Documentum:

1. From the Distribution Definition page, create a new Distribution Definition or click an existing Distribution Definition.
2. Click the Distribution Options tab.
3. In the Printer Type drop-down list, select Archive.
4. In the Archiving Format drop-down list, select Documentum.
5. Before archiving your output to a Documentum DocBase, xPression must first create the file at a temporary location on your local computer. In the Temporary Location section, use the Literal, Variable, and Counter functions to define a temporary location for the output file.
6. In the ECM Configuration list, select your ECM configuration.
7. In the DocBase Output Path section, use the Literal, Variable, and Counter functions to define the path to an existing directory in your DocBase. This directory will store all output from this Distribution Definition.
8. Every asset stored in the Documentum Docbase is stored as an object. In the Object Name section, use the Literal, Variable, and Counter functions to define the name of the object (your output file) as it will appear in the Documentum DocBase.
9. In the Object Type list, select an existing Documentum object type. Each object type has its own set of attributes that can be defined by the user or are inherited.
10. Select the Start Process check box if you want your output to start a Documentum workflow process. When you select this option, the Attach to Process option appears below.
11. In the Attach to Process list, select the process to which you want to attach the output. This list displays all workflow processes on your Documentum system. If the process you select has multiple package types, the 'Package Type list appears.
12. In the Package Type list, select the correct package type for your output.
13. In the Object Attributes Mapping section, map each attribute to an xPression output variable or to a literal value. If you have required inherited attributes that do not appear in the list by default, you can display all inherited attributes by selecting the **Load inherited attributes** check box.
14. Click **Save** when completed.

For more information about these settings, see Documentum Distribution Options Tab Options, page 252.

Return to Caller Distribution Definitions

xAdmin comes with a built-in Distribution Definition called "Return to Caller". You cannot edit the Distribution Options for this built-in definition, but you can create new Distribution Definitions that use the Return to Caller feature.

When creating or editing new Return to Caller definitions, click Distribution Options. The only option available is Generic Index. This feature enables you to create an XML formatted index that lists media counts and values for all defined output and system environment variables in the output stream. When activated, xPression creates the index each time the batch job is run. The index is saved to the same directory where your output file is stored.

The Output Media Count Info section enables you to keep track of media, or paper stock, used in a job. Paper stock is accounted for in xPression through the tracking of markers. For each job run, a media count for each marker in the job is accumulated by xPression. Media counts are accumulated on three levels: stream, partition (output file), and package. Select which level(s) you want reported in the index file. For more information, see Paper Stock Accounting, page 158.

The Output Variable Used in Metadata section contains a list of all Output Variables and System Environment Variables defined on your server. When you select a variable from the list, the index file will contain information about the use of these variables in your documents.

xPublish Distribution Modes

The general tab contains your distribution definition name and distribution mode. You can use the following Distribution Modes:

- Immediate — Immediately distributes the document to the selected device. Select this option if you want your document published and distributed immediately upon submission. If you are distributing the document through e-mail, the document will be sent. If you are distributing it to a printer, the print file will be created. If you are archiving the document, it will be saved in the archive format. In all of these scenarios, the xPression will immediately perform the requested action.

  This option can be selected for both transactional and batch applications, and can be used with Print and Archive Distribution Definitions.

- Queue for Batch — This option is for transactional applications that need to queue documents for batch processing. You cannot publish xPresso-based documents with this option. A transactional distribution request sent by xRevise, xResponse, or any application built with xFramework causes the jobs held in queue to be processed when the batch job specifies they are to be output. They can only be processed by the batch job that specifically identifies them for processing.

  If you invoke this option from a batch job, the document is processed as if you had selected Immediate. This occurs because there is no need to queue the documents for batch when xPression Batch is originating the request. When documents are placed in queue for batch output, the output profile has no impact until the output is produced, and then only for specific output types such as PDF, PCL, PostScript, and AFP. HTML and DOCX are not paginated and so do not respect inclusion conditions.

  This option can used with Print and Archive Distribution Definitions.

- Return to Calling Application — Returns the document to the calling application where it is presented to the user to send to a local device. This option only returns documents that are clearly defined as single documents (single print files). It will not return archives or partitioned files. This option returns documents when called from xDesign, xFramework, xRevise, and xResponse, and returns one document for each stream.

Output Profiles

xPublish output profiles tie together all your output settings into one profile. They publish a selection of documents (determined by the output stream) in a specific format (defined in an output definition) through a specific distribution method (as defined in a distribution definition).

Tip: If multiple users in xDesign, xResponse, or xBatch are using the same output profile at the same time, and that profile has an output stream that produces a single print file with a static file name, the print output produced by the users may conflict. To avoid this situation, leave the file name blank when you create the distribution definition. xPression will then produce output files with unique names for each user request.

Output Profiles: List Options

To set up your output profile, click **Output Profiles** from the xPublish Output Management menu. The main output profile page appears, showing a list of all available output profiles. This page contains the following elements.

Element Name	Description
Add Button	Enables you to create a new output profile.
Copy	To create a duplicate item , select the item you want to copy and click **Copy**. The duplicate item appears in the list with the words “Copy of” placed before the original name.
Delete	To delete an existing item, select the item you want to remove and click **Delete**.
Output Profile Name List	To edit the settings of an existing item, click the item name.

Output Profile Options

To access the output profile options, click Add from the Output Profiles: List page to create a new output profile or click an output profile name from the list.

This page contains the following options.

Element Name	Description
Name	Supply a name for the output profile. The name must be between 1 and 255 alphanumeric characters.

Element Name	Description
Add Button	Click the Add button to create a new output profile combination. Each time you click Add, xPression adds a new row to the Output Profile Combination list. **Note:** If the output definition of a output profile combination includes Fillable PDF, you can only add one output profile combination.
Output Stream	From the Output Stream list, select the output stream you want to use in your output profile. This list contains all existing output streams in your system.
Output Definition	From the Output Definition list, select the output stream you want to use in your output profile. This list contains all existing output definitions in your system.
Distribution Definition	From the Distribution Definition list, select the distribution definition you want to use in your output profile. This list contains all existing distribution definitions in your system.

Creating an Output Profile

Output profiles can contain one or more sets of printer and distribution definitions allowing you great flexibility in the way you to organize your output production.

Note: Remember that any time you make changes to your output profiles that affect the document assembly, you must make sure your designers re-generate XML so that the changes are applied to their documents.

To create an output profile:

1. From the Output Profile: List page, click **Add**.
2. From the Name box, type a name for the output profile. It can be up to 255 alphanumeric characters.
3. In the Output Stream list, select the output stream that contains the features you want use to publish.
4. In the Output Definition list, select the desired output definition. xPression supplies four default output definitions, HTML, Packed MSOHTML, PDF, and Web Archive. These default output definitions have very specific purposes. For a description of all output definition formats, see the output definition table in Output Definitions, page 198.
5. In the Distribution Definition list, select a distribution definition.
6. You can define multiple rows of output profile combinations. If you want to add another row, click **Add**.
7. Click **Save** when completed.

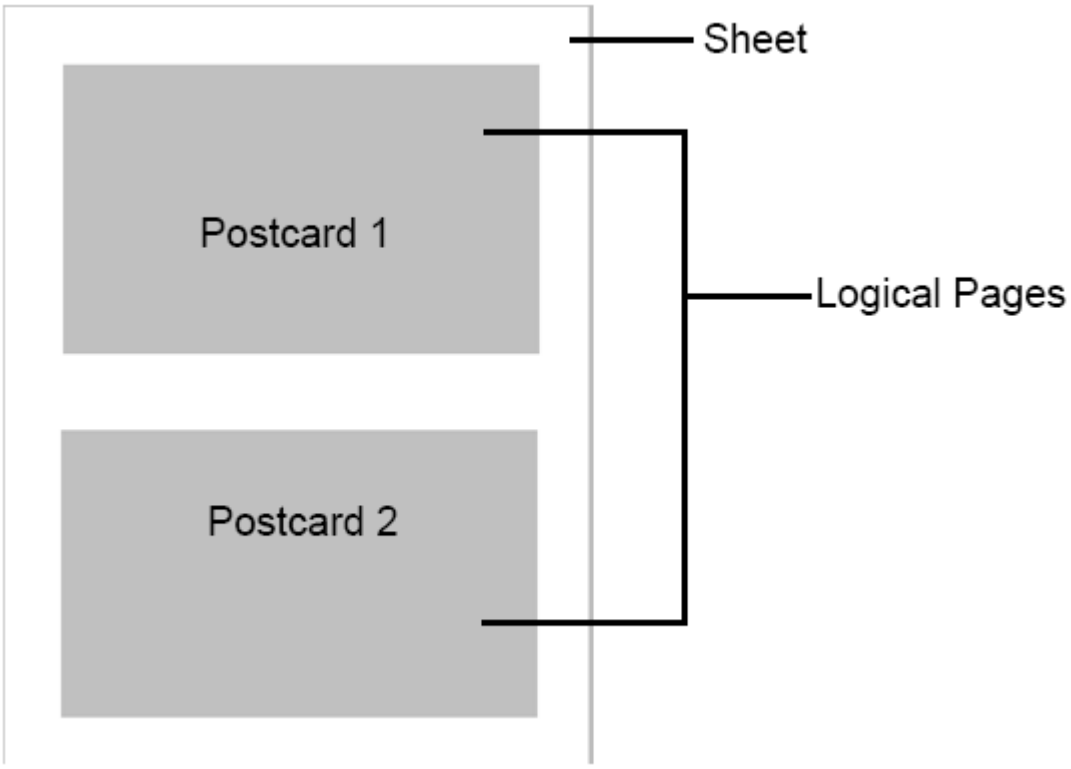
Tip: Sometimes the names of output streams, output definitions, and distribution definitions can be long and exceed the available space in the list. To see the entire name of any component in any

of the lists, hold the cursor over the item momentarily without clicking. A tooltip with the entire name will open.

Output Management Scenario

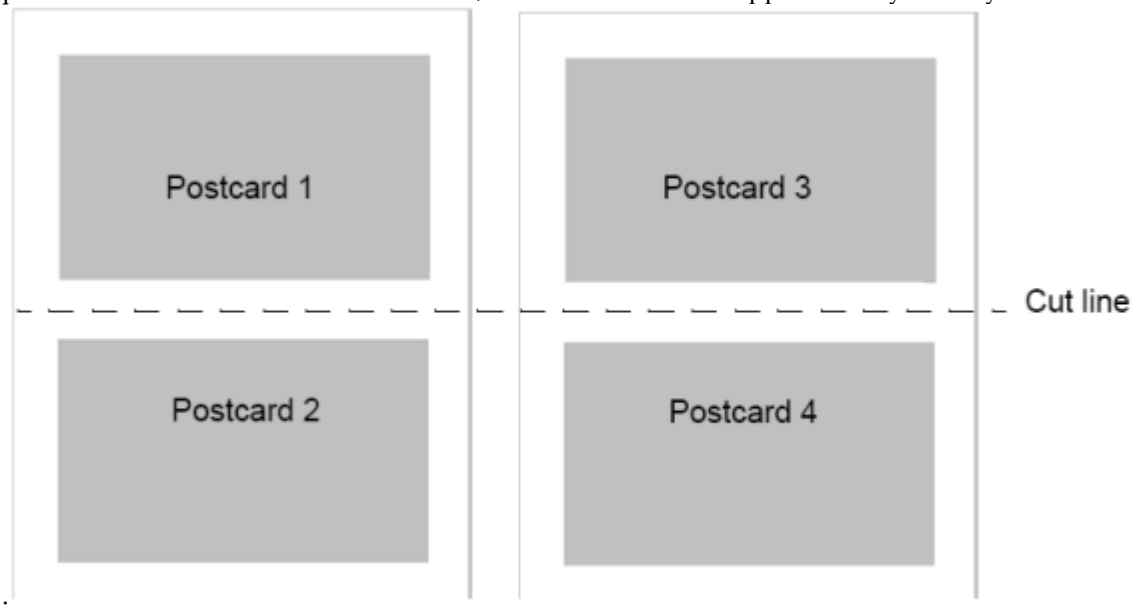
To help understand how features like imposition definitions, markers, and separator sheets can help improve the speed and efficiency of your finishing operations, consider the following scenario.

Your company plans to mail postcards to a list of potential customers.
To save money, the postcards will be placed two on a sheet



.

The finished pieces must be placed in postal trays in the order of the data file. Because your postcards need to be assembled in order, consider what will happen when you cut your sheets



.

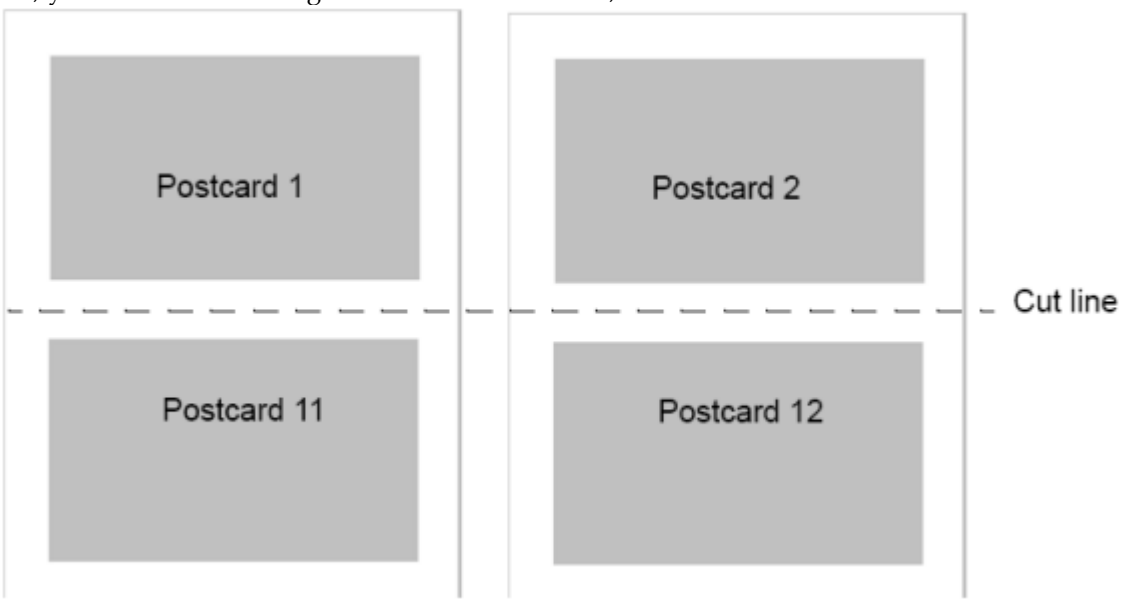
These sheets will be placed in a stack and cut horizontally across the middle of the page. The bottom stack will then be placed behind the top stack. In this scenario, the numbering of the postcards will be incorrect (1, 3, 2, 4).

Consider how difficult it will be to put the postcards in the proper order when printing thousands of postcards at a time. xPublish enables you to easily produce correct numbering through the use of N Up Stacked imposition.

Using N Up Stacked Imposition

N Up Stacked imposition enables you to rearrange the logical pages on your sheets in accordance with stack height. For example, if your paper cutter can only cut 10 sheets of paper

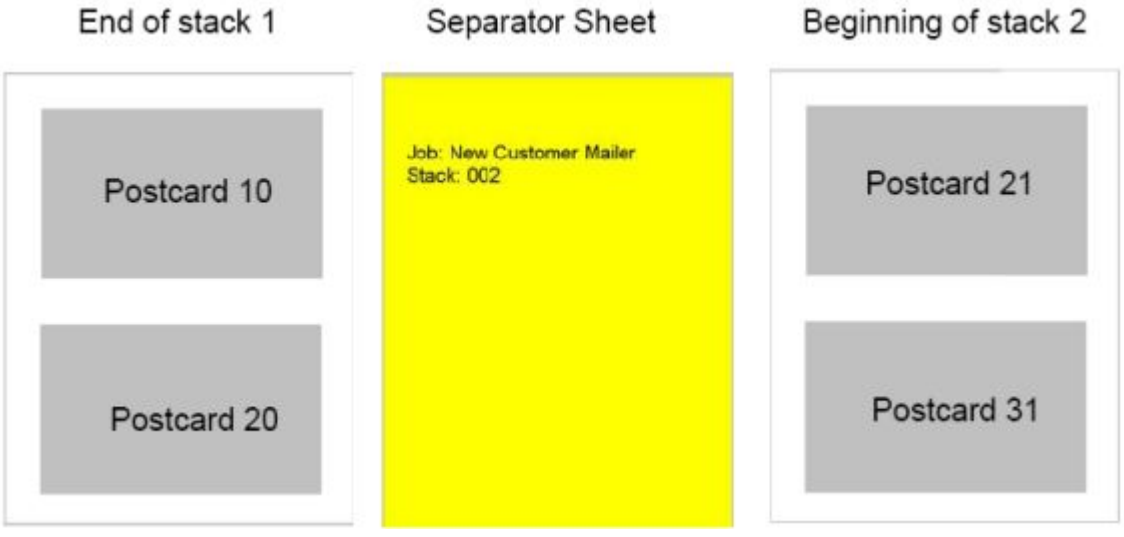
at once, you define a stack height of 10. In this scenario, the first two sheets would look like this.



When you cut the stack in half, the top stack will have postcards 1-10 and the bottom stack will have postcards 11-20. If you place the top half of the stack into the postal tray first, then put the bottom half in the tray after it, the postcards will be ordered 1-20.

Using Separator Sheets

If your print job is very large, it can be very difficult and time consuming to try and determine where one stack ends and another begins. To solve this problem, use the separator sheets function to create a visual signifier for the end of a stack. For example, the separator sheet could be yellow while the postcards are mostly white. You can also place identifying information on the separator sheet so the cutting machine operator knows which job the stack belongs to.



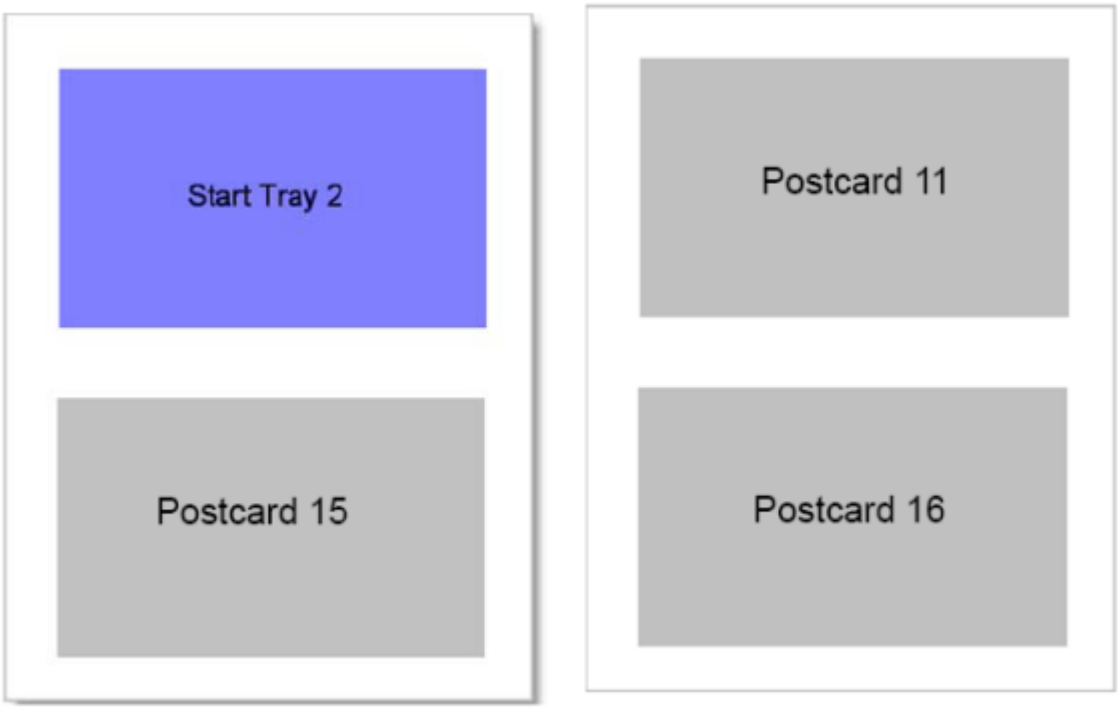
Using Markers

To make your separator sheet use a different paper color or paper type than the rest of your job, use markers to change the paper tray for the separator sheet. In a separator sheet definition, you can specify a change in media and select an existing marker to implement at production time. The marker can be associated with a change in paper trays as defined in a printer definition. Each time the separator sheet is implemented, xPression will change the paper tray.

Using Separator Sheets Upon Change in Variable

After the postcards are cut and their order maintained, they need to be placed into postal trays. Each tray has a different destination. In some cases each tray will be sent to a different bulk mail center. In our scenario, each tray is destined for a different zip code.

After cutting, the postcards are all in order, but there is no easy way to determine where one zip code ends and another begins. Within your job, you can specify that separator sheets be placed on a logical page each time a specified variable is changed. If you specify a variable for zip code, xPression will place a separator sheet on the logical page each time the zip code changes. This separator sheet enables the employee who is placing the postcards into postal trays to see where a new zip code begins



.

Chapter 10

Utilities

xPression Utilities enable you to move documents, output profiles, and jobs from one environment to another. You can also import and migrate packages from your xPresso applications. In most xPression environments there is a clear division between the design and production environments. Documents are created and tested in a design environment, approved in an approval sub-system, and finally migrated to a production environment that produces and distributes the document. These utilities enable you to efficiently move your documents between these environments.

If you do not see this menu, or any of the submenus, in the xAdmin interface, you do not have permission to access them. See your xPression administrator for access.

The Utilities have three main features, Migrate, Export, and Import:

- Import — Imports packages from a network or local directory. You can import documents, Job Definitions, Output Profiles, xEditor Configurations, QuickPicks, and Channels.
- Export — Exports packages from your server to a network or local directory. You can export documents, Job Definitions, Output Profiles, xEditor Configurations, QuickPicks, and Channels.
- Migrate — Migrates packages from one xPression Server to another. You can migrate documents, Job Definitions, Output Profiles, xEditor Configurations, QuickPicks, and Channels.

Each of these actions can also be performed from the command line.

The Import and Export functions are most useful when operating in a highly distributed server environment where connectivity between servers may not exist or network performance is prohibitive.

Note: PDPXs created prior to version 2.0 can't be imported using the Utilities in xAdmin. Contact your EMC Document Sciences representative for assistance in upgrading your documents.

See the following topics:

- How Do the Utilities Work?, page 272
- How to Tell if Documents Need Migration, page 275
- Proper Migration Procedures, page 276
- Import, page 279
- Export, page 282
- Migrate, page 287
- Command Line Migrations, page 301
- Setting Up the Target Server, page 301

How Do the Utilities Work?

When running the Utilities as a batch process, xPression reads the migration instructions from an XML formatted migration specification. When running the Utilities from the xAdmin interface, you manually define which items you want to move and which categories to migrate to.

In either mode, the Utilities read from the source content repository and create a Portable Document Package (PDPX) containing everything needed to create a copy of the original documents. This package includes all the rules, the content repository objects, their attributes, and template associated with the pending document.

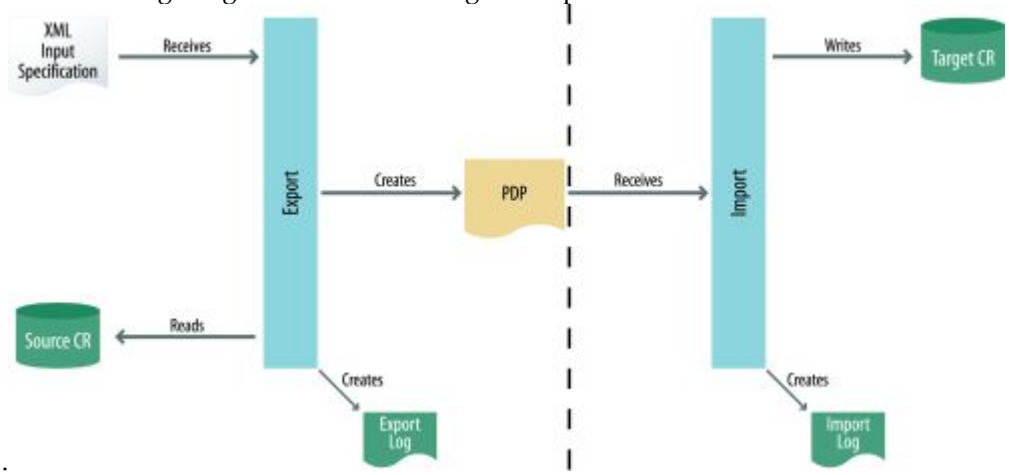
Note: No approved document versions are migrated.

See the following topics:

- Migration Diagram, page 272
- PDPX Contents, page 273
- What Happens When You Migrate a Document More Than Once?, page 275
- When Communication Fails Between Your xPression Servers, page 275

Migration Diagram

The following diagram shows the migration process



.

As xPression passes the PDPX from the source category to the target category, it writes information to a log file.

Migrating xPresso for Word Documents

xPresso for Word documents can be associated with a workflow. When you migrate an xPresso for Word document with the “Submitted” status, the status of the document on the target server is changed to “Pending”. The status of the source document is unchanged. The following table shows how migration affects the status of a workflow enabled xPresso for Word document.

Source Status Before Migration	Target Document Status After Migration
Pending	Pending
Submitted	Pending
Approved	Approved
Rejected	Can’t be migrated
Withdrawn	Can’t be migrated

PDPX Contents

The xPression PDPX files contain different elements depending on what you are migrating. Check the following tables to see what is included in the PDPX file for documents, job definitions, and output profiles.

Document PDPX Contents

When you are exporting, importing, or migrating documents, the PDPX contains the following information.

Item	Description
Run Parameters	A copy of the XML input parameters.
Business Rules	The rules associated with a specific document.
Content Directory	A database table that contains a list of all the source content IDs, document IDs, and attributes.
Content Files	Content objects, documents, and templates.
User Exit Definition	The User Exit definition is migrated.

To prevent losing output variable mapping specified in the document properties in xDesign, migrate your document and data source first, then migrate the output profile.

Note: Mappings will be lost if the output profile is migrated first.

The output variable mapping is always included with the document PDPX file (mapping is located in the rules.xml file). If the target system has the output variables prior to document import, the mapping is imported with the document. If the target system does not have the output variables, the document import process will drop the mapping.

Output Profile PDPX Contents

When you migrate or export your output profile, xPression also migrates all of the supporting output management files.

For xPublish, this includes:

- Output Profile: Including the association between the output definition, the distribution definition, and the output profile itself.
- Output Streams: Including the association between barcodes and output streams.
- Device, Marker, and Content Stamp definitions.
- Output Definitions: Including PDF encryption information and printer resident images references.
- Distribution Definitions.

Job Definitions PDPX Contents

When you migrate or export your job definition, xPression migrates the following files:

- Job Definition: Exported as an XML file.
- Output Profile: Including the association between the output stream, the format definition, the distribution definition, and the output profile itself. For a list of these supporting files, see Output Profile PDPX Contents, page 274.
- The default path for xPublish is: C:\xPression\Publish\Output\

What Happens When You Migrate a Document More Than Once?

xPression migration is designed as an incremental process; therefore, it supports migrating documents multiple times. If a document has already been migrated, xPression:

- Transfers updates of the elements in the source content repository to the target content repository.
- Transfers newly added elements in the source content repository to the target content repository.
- Will update the target content repository with any deletions from the source content repository.
- Will add an element in it's new location in the target content repository if it was moved in the source content repository and remove the element from the old location in the target content repository.
- Deletes any newly added elements in the target content repository.
- What is exported from the source is exactly the same as what is imported to the target. Anything added or modified in the target is deleted or modified to match the source.

When Communication Fails Between Your xPression Servers

If you are working in an environment where connectivity between your xPression servers is poor or non-existent:

1. Use Export to export your document to a PDPX file on your source server.
2. Manually transfer the PDPX file to the target server using file copy, FTP, or any other file transfer utility. If you use FTP, be sure you transfer the file in binary mode.
3. Import the PDPX to your target category from the location on the target server.

How to Tell if Documents Need Migration

xDesign documents that need migration appear in bold on the Export and Migration xAdmin pages. This feature helps development staff keep track of documents that have been revised after the last

time they were exported or migrated to the production or test environments. If the document is new or changed on the existing server, it will appear in bold because it should be migrated to any other server that needs to stay in sync with the source server. After these documents are exported or migrated, the document names will no longer appear in bold in the development environment, but they will appear in bold in the environment to which they were exported.

For example, let us presume that you have three environments: DEV, TEST, and PROD.

- Your document was developed in DEV, exported to TEST for testing, and then exported to PROD for production. At a later date, you used xDesign to make changes to the document on the DEV server. At this point, the document name in the xAdmin Export page in the DEV environment will be bold because changes were made to the document after the last export.
- When you export the document to the TEST server, the document name on the DEV server will no longer appear in bold, but the document name on the TEST server will appear in bold because the document has been changed on that server.
- When you export from the TEST server to the PROD server, the document name on the TEST server will no longer appear in bold.

Proper Migration Procedures

It is important to use proper procedures when migrating, exporting, and importing items through xAdmin. Please review the following topics:

- Working With Multiple xPression Databases, page 276
- Migrating Output Profiles, page 277
- Scheduling Migrations, page 277
- Migrating Documents with Markers, page 277
- Migrating in Multiple Region Environments, page 277
- Migrating Large PDPX Files, page 278
- When Your Migration or Import Contains an XQuery File, page 278
- Migrating Content From Previous xPression Versions, page 278
- Configuration Issues, page 279
- Document Metadata, page 279

Working With Multiple xPression Databases

You should not import packages from an xPression Database that is not the designated database for your xPression Server. Doing so can cause data corruption. To prevent your users from importing packages from other databases, you can configure xPression to allow imports from only designated databases. To configure this function:

1. First, you must determine the ID of your Server's xPression Database. Start xAdmin and click **`System Management`**.

2. Locate the CRUUID at the top of the page. This is the CRUUID for your database.
3. Open Migrate.properties from the xPressionHome directory.
4. Locate the **`AllowedCRUUIDs`** property.
5. Type the CRUUID for your database as the value for this property. You can enter multiple CRUUIDs by separating them with a comma (,).
6. Save the file.

Migrating Output Profiles

When you migrate an output profile, ensure that the output path defined in your Distribution Definition for Print and Archive exists on your target environment. If the path does not exist, xPression will place a warning on the xAdmin page and in the log file. Please add the path to your target environment. .

Scheduling Migrations

xPression enables you to migrate documents while those documents are in production. Problems can occur when a migration and a publishing process are running in parallel and the migration process ends first. In this case, it's possible that the migration made some changes to the document that would not be expected by the user initiating the publish process. When this happens, xPression will generate an error message encouraging the user to verify the output and possibly re-run the job. To avoid this problem, please try to schedule your migrations to lower the possibility of the document publish process and the migration process running at the same time.

Migrating Documents with Markers

When your document contains markers, ensure you import the document PDPX before you import the associated Output Profile PDPX.

Migrating in Multiple Region Environments

Migrations, imports, and exports are one directional. Reverse migrations and skipping regions in your migration process causes performance degradation and requires using overrides.

To illustrate how migrations work, see the following example. It demonstrates how migrations work in a typical four region environment (dev, test, qa, and prod). To move a document from the development environment to the production environment, use the following migration workflow.

1. Export DocumentA from Dev using PDP1.

2. Import PDP1 to Test.
3. Export DocumentA from Test using PDP2.
4. Import PDP2 to QA.
5. Export DocumentA from QA to create PDP3.
6. Import PDP3 to Prod.

Note: This procedure can be modified to use the PDP from Dev through the entire process.

xPression objects (documents, rules, content Items, etc.) use an internal numeric sequence to uniquely identify components in the xPression database. Those components are referenced in the migration logs to determine if a component has changed since the previous import (or migration).

Migrating Large PDPX Files

If you are migrating, importing, or exporting a large PDPX file, your xAdmin session may timeout before the migration process completes. Do not worry, it is very likely that your migration will complete successfully. The timeout is an Internet Explorer issue and unrelated to your document migration.

First, ensure that your migrations are indeed completing successfully, check the xPression.log file and the migration.log file (for migrations performed from xAdmin) or the migration_batch.log file (for migrations performed from the command line) located in your xPressionHome directory. If the migrations are completing successfully, you can alleviate the timeout by adjusting the Microsoft KeepAliveTimeout registry value. This value is located in the following key:

HKEY_CURRENT_USER\Software\Microsoft\Windows\CurrentVersion\InternetSettings

You should use extreme caution when making changes to the Windows registry. This task should be completed by an advanced user or a system administrator. You can do serious damage to your system if you make mistakes in the Windows registry.

Complete steps for this process can be found in article 813827 on the Microsoft support site.

http://support.microsoft.com/default.aspx?scid=kb;en-us;813827

When Your Migration or Import Contains an XQuery File

If you are migrating a document or output profile that makes use of an XQuery file, the XQuery file must be separately uploaded to /xPressionHome/customerData/XQuery folder before the migration is performed.

Migrating Content From Previous xPression Versions

In older versions of xPression, xAdmin allowed you to create Output Variables with the same name as built-in xPression system variables. xAdmin will no longer allow the creation of these Output

Variables. If you are importing Output Variables from previous xPression versions that use the same name as an xPression system variable, ensure that you rename the Output Variable after import.

Configuration Issues

To avoid complications and errors, ensure you adhere to the following recommendations:

- If you clone one of your xPression databases, ensure that you do not place the cloned database in a migration path.
- Do not ever alter the CRUID setting in your xPression database, or in any PDP.

Document Metadata

If your document contains Catalog or xPressForms document metatdata, the import, export, and migrate functions will automatically include the metadata with the document. The metadata will belong to the selected package, and will not take into consideration different versions of the package.

Controlling the Status of Migratable Documents

The Migration.properties file located in the xPressionHome directory contains a property named MigrateEnabledWorkflowStateThreshold. This property sets the lowest level of document status that the server can migrate. The Migrate interface will restrict the availability of document statuses according to this setting.

Import

The Import utility enables you to import Portable Document Format (PDPX) packages into your xPression Database. The PDPX files can contain documents, Job Definitions, Output Profiles, xEditor Configurations, QuickPicks, and Channels. To access the Import utility, click **Import** from the Utilities menu. The Import utility contains the following elements.

Element Name	Description
Cancel	Exits the Import page and resets the Import utility page.
Start	Click Start to begin the import process.

Element Name	Description
PDPX Location	Specifies if your PDPX is located locally on the xPression Server, or remotely on an xPression client. Select the correct option for your PDPX file. The xPression server that contains your target content repository must be able to access the directory where your PDPX resides.
PDPX Path	The path(s) and filename(s) for the PDPX(s) you want to import. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. You can import more than one PDPX at a time by clicking **Add** to add a new row to the PDPX Path table. To remove a row from this table, select the row and click **Delete**.

Note: You can only import PDPX files using the Import utility. Other types of documents, such as.xindd, .xword, .xdrwv, and .pkg files, can only be checked into the server through xPression client applications.

See the following topics on the Import feature:

- Importing Pre-4.5 xPresso Documents, page 280
- If You are Using Solaris, page 281
- Importing Output Profiles, page 281
- Importing Files from a Server Folder, page 281
- Importing xPresso Packages, page 281

Importing Pre-4.5 xPresso Documents

xPresso for Word is not backward-compatible with older versions of xPress for Word. Consequently, you cannot use the current version of xPresso for Word to open documents that were created prior to xPression 4.5. To move your pre-4.5 documents into your current system, you must first export them from your pre-4.5 environment in a PDPX file. Then, you can import the PDPX file into the xPression Database. The import will fail if the xPression Database already contains a document with the same name. If successfully imported, the document will be assigned version 1.0. Once the document is imported, you cannot import another copy or revision of the same document unless you delete the existing document first.

xPresso for Adobe InDesign and xPresso for Dreamweaver are backward-compatible with older versions of the software, enabling you to use your client applications to check the old documents into your new system. You can also import these documents through xAdmin if the document is in a PDPX file.

If You are Using Solaris

If you import a document on a Solaris platform that contains a font that is not already in the content repository, the import will fail and xPression will generate a message stating that the font could not be loaded.

Importing Output Profiles

When importing an output profile that has the same name as an existing output profile, xPression will verify which output profile is more recent. If the existing output profile is more recent than the output profile you are importing, the import will be aborted. If the existing output profile is older than the imported output profile, xPression will continue with the import and overwrite the existing output profile.

When an existing output profile is overwritten, the marker references in the existing printer definition are not overwritten. If you want the marker references to be overwritten, add the following property with the value set as true in `Migration.properties`:

```
OverwriteMarkerDefinitionsInMigration = true
```

Importing Files from a Server Folder

You can specify a folder on the server from which to import PDPX files, and then select which files in that folder should be imported, rather than specifying individual PDPX files. To import PDPX files from a folder on the server:

1. Select **The PDPX is on server side** for PDP location. A field becomes available under the PDP Location selection.
2. Type the path to the folder where the PDPX files are located and then click the **Retrieve Files** arrow.
3. The Retrieve Files pop-up window opens with a list of files available in the specified location. Select the PDPX file or files that you want to import.
4. Click **Add**. All selected files are added to the list of files under PDP Path.
5. Click **Start** and provide target categories for the imported files.

Importing xPresso Packages

To use an xPresso document as a subdocument with xDesign, or to publish an xPresso document through xRevise, xResponse, or in batch mode, you must import the xPresso package to an existing category.

The import process does **not** import your xPresso data source. To use your xPresso document with xDesign, xResponse, xRevise, or in batch mode, you must set up your xPresso data source in the

Category Management section of xAdmin. Set up your data source and associate it with a category before attempting to import your package.

Please be aware of the following issue involving xPresso documents that have been exported from one xPression Server and imported to another xPression Server through a .pdpx: If the xPresso document in the .pdpx contains an image name that conflicts with an existing image name in the xPression database, xPression renames the imported image by add a suffix of "_1" to the original name. However, the image reference in the xPresso package can't be updated accordingly, so the xPresso document in the .pdpx will still reference the original image name. The imported xPresso document will link to the original image in the xPression database and not the newly imported, renamed image. If the newly imported image is different than the original image, and must be used in the document output, the image link in the original document must be manually updated to use the new name that contains the "_1" suffix. The document will then need to be packaged from the source server and imported to the target server again.

To import an xPresso package:

1. From the Utilities menu, click Import.
2. If your package is on your server, select the **The PDPX is on the server side** option. If your package is on a client machine, select the **The PDPX is on the client side** option.
3. In the PDP Path section, supply the path and file name for your package. If you want to import additional packages, documents, job definitions, or output profiles, click Add to add a new line.
4. When you have defined all of the packages or PDPX files that you want to import, click **Start**.
5. xPression displays a new page that enables you to selected a destination category for your xPresso package. This page enables you to select target categories for all packages or PDPX files you are importing.
6. Select the category that contains your xPresso data source and click **Start**.
7. xAdmin displays a message indicating that your import was successful.

Export

You can export an item from your content repository using the Export function on the **Utilities** menu. You do not need to manually create a migration specification to export from xAdmin. The export options are different for each type of exported item:

- xPression Document, page 283
- Export Job Definition Options, page 284
- Export Output Profile Options, page 285
- xEditor Configuration, page 286
- QuickPick, page 287
- Channel, page 287

xPression Document

To export an xPression document, click **Export** from the Utilities page and select **xPression Document**. You do not need to manually create a migration specification to export a document from xAdmin.

This page contains the following elements.

Element Name	Description
Spec Path	The path and file name for the migration specification. xPression creates the migration specification and saves it using the path and file name you defined.
PDP Path	The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression Migrate creates the PDPX and saves it using the path and file name you defined.
Status of Documents Migrated	This feature is operational only when you select an xPresso for Word workflow enabled category. Use this drop-down list to define the workflow status of the documents that appear in the Available Documents list. You will be able to select document statuses that are equal to or higher than what is defined in the MigrateEnabledWorkflowStateThreshold property. See Controlling the Status of Migratable Documents , page 279 for more information.
Synchronize Document Migration Flag and Time	Use this option to enable or disable checking changes of existing text pieces in documents since the last migration. When this option is selected, all xDesign documents that need migration appear in bold in the Available Documents list. When this option is not selected, documents that only contain text piece changes appear in plain text in the Available Documents list. This option is selected by default.
Source Category	Select a category from the list of available categories. All documents from the selected category appear in the Available Documents list.
Available Documents	Add documents to the export list by selecting a document from this list and clicking **Add**. To view the subdocuments and universal content contained in a document, click the plus sign next to the document.
Selected Documents	The list of documents to be included in the export. In this area you can choose to give the target category a new name, and select the approval status for the document. To read more about the options, see Selected Documents Options, page 284.

Click **Start** to begin the export process. xPression will post a message at the top of the xAdmin page when the export has completed. To view the log file, open the xPression.log file and either

the migration.log file (for migrations performed from xAdmin) or the migration_batch.log file (for migrations performed from the command line) located in the xPression installation directory.

Selected Documents Options

The Selected Documents options are:

- **Selected Documents.** The list of documents that will be exported. Remove documents by selecting their check box and clicking **Remove**.
- **Category Info.** Tells xPression to name the target category the same name as the name of the source category. If there is already a category of that name on the target server it will be overwritten. If this option is cleared, then you can enter a new name in the Target Category box.
- **Target Word Template**. Type the path and name of the word template to use on the target server. This is useful when changing the location of your word template or if you are switching to a new template entirely. Supplying the template path in this field relieves you from the chore of updating the template path in xDesign for each exported document.
- **Version Effective Date**. xPression simulates a "Generate XML" and "Create Document Version" after importing a document. The Version Effective Date will be attached to the new Document Version.

  If the effective date already exists on the target, that document version will be deleted and then recreated.
- **Approval.** Send only documents that have been **Approved**, or **All** documents in the export.
- **Target Category.** Names the category at the target location to something different than the source category name if you type the new name here. This edit box is available only when the Category Info check box is cleared.
- **Include Fonts**. Select this check box to migrate your fonts from the development to production environments.

Export Job Definition Options

To export a job definition, click **Export** from the Utilities page and select **job definition**. You do not need to manually create a migration specification to export a job definition from xAdmin. The Export utility contains the following elements.

Element Name	Description
Spec Path	The path and file name for the migration specification. xPression creates the migration specification and saves it using the path and file name you defined.

Element Name	Description
PDPX Path	The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression creates the PDPX and saves it using the path and file name you defined.
Available Job Definition List	This list shows all available job definitions on your source content repository. Select the job definitions you want to export and click Add to move them to the selected job definition list.
Selected Job Definitions List	This table shows the job definitions you selected for export. You can remove job definitions from this table by selecting the check box next to the job definition and clicking **Remove**.
Include Output Profiles	Select this option to include all output profile information associated with this job definition.

To export the job definitions, make your selections and click **Start**. When the export process completes, xPression displays a completed message. To view the log file, open the xPression.log file and either the migration.log file (for migrations performed from xAdmin) or the migration_batch.log file (for migrations performed from the command line) located in the xPression installation directory.

Preventing Errors

To prevent errors from causing your import to fail, use the following tips.

Issue	Suggestion
Missing Files	Ensure all of your supporting output management files reside in their proper locations. If a file is missing, the import will fail and write an error to either the migration.log file (for migrations performed from xAdmin) or the migration_batch.log file (for migrations performed from the command line).
Overwriting Job Definitions and Output Profiles	All the Job and output profiles are stored with a “last modified” time. If the last modified time of the PDPX is newer than the last modified time for the item in the xPression database, the job definition or output profile will be imported. If the “last modified” time is older, it will not be imported.
Category and Data Source on the Target Server	Job definitions reference data sources. Therefore, you must set up your data sources on the target server.

Export Output Profile Options

To export an output profile, click **Export** from the Utilities page and select **output profile**. You do not need to manually create a migration specification to export an output profile from xAdmin.

The Export utility contains the following elements.

Element Name	Description
Spec Path	The path and file name where xPression saves the migration specification.
PDPX Path	The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression creates the PDPX and saves it using the path and file name you defined.
Available Output Profile List	This list shows all available output profiles on your source content repository. Select the output profiles you want to export and click **Add** to move them to the Selected Output Profile list.
Selected Output Profiles List	This table shows the output profiles you selected for export. You can remove output profiles from this table by selecting the check box next to the output profile and clicking **Remove**.

To export the output profiles, make your selections and click **Start**. When the export process completes, xPression displays a completed message. To view the log file, open the xPression.log file and either the migration.log file (for migrations performed from xAdmin) or the migration_batch.log file (for migrations performed from the command line) file located in the xPression installation directory.

xEditor Configuration

To export an xEditor configuration, define the following options and click **`Start`**.

- Spec Path — The path and file name where xPression saves the migration specification.
- PDP Path — The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression creates the PDPX and saves it using the path and file name you defined.
- Available xEditor Config list — This list shows all available xEditor configurations on your server. Select the xEditor configuration(s) you want to export and click **`Add`** to move them to the Selected xEditor Config list.
- Include Toolbar/Ribbon Settings — Select this option if you want to export any Toolbar or Ribbon settings you have defined.
- Include carry forward configs — Select this option if you want to include the xAdmin Auto Carry Forward configuration in the PDPX.

QuickPick

To export a QuickPick, define the following options and click **Start**.

- Spec Path — The path and file name where xPression saves the migration specification.
- PDP Path — The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses ((()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression creates the PDPX and saves it using the path and file name you defined.
- Available QuickPick list — This list shows all available QuickPicks on your server. Select the QuickPick(s) you want to export and click **Add** to move them to the Selected QuickPick list.

Channel

To export a Channel, define the following options and click **Start**.

- Spec Path — The path and file name where xPression saves the migration specification.
- PDP Path — The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses ((()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression creates the PDPX and saves it using the path and file name you defined.
- Available Channel list — This list shows all available Channels on your server. Select the Channel(s) you want to export and click **Add** to move them to the Selected Channel list.

Migrate

You can migrate a document from your xPression Database using the Migrate function on the **Utilities** menu. You do not need to manually create a migration specification to migrate from xAdmin. The migrate options are different for each type of content.

See the following topics on the migrate feature:

- xPression Documents, page 288
- Job Definitions, page 294
- Output Profiles, page 295
- xEditor Configuration, page 296
- QuickPick, page 297
- Channel, page 297
- Migration Timeouts, page 298
- Migration Overrides, page 298

xPression Documents

Before you migrate a document from one server to another, ensure the following:

- The two xPression servers have been installed.
- Each xPression server has the correct JDBC drivers installed.
- If you are migrating documents and corresponding output profiles, you must migrate your documents before migrating your output profiles.

Note: There is no connection between the effective date specified on export and the effective date established in xDesign on the Dev environment. The most current state of the document is migrated and the date selected is the date used to create a document version on the target.

Important Information About Document Migration

The following topics contain important information about the migration process:

- Online Migrations
- Multiple Migrations
- Migrating Approved Content
- Migrating Shared Content
- Migrating Optional Paragraphs
- Migrating Subdocuments
- If You Copied Your Content Repository to Your Production Environment

Online Migrations

- During an online migration, xAdmin doesn't prompt you with any failure information if a failure occurs during the import process.
- For online migrations, ensure that the URL contained in the MigrationServer.xml file is correct. If the target server has security controls, you must add a user ID and password to the MigrationServer.xml file.

Multiple Migrations

- Documents can be migrated many times. However, if xPression encounters a document of the same name in the target content repository while migrating a document for the **first** time, xPression will abort the migration and issue an error message.
- xPression stores the last modified date of imported PDPXs and their contents in the target server's history file. xPression uses this date to compare incoming PDPXs and their contents to existing PDPX contents. Existing items whose update date is different than incoming items' update date are replaced with the incoming item.
- If you update a document on the source server that you have already migrated, and you want to migrate the updated document to the target server as a new document, copy the updated document and give it a new name, and then migrate the newly named document to the target server.

Migrating Approved Content

You can migrate both approved and unapproved content. If the content is not approved, execute the Generate XML command in xDesign before you migrate the document.

Migrating Shared Content

Shared content in the originating content repository remains shared at the target location.

Migrating Optional Paragraphs

When migrating documents containing optional paragraph groups, keep in mind that optional paragraph group names must be unique. If the target server already has an optional group with the same name as the imported the imported document, the name of the imported optional paragraph group will be given a counter. For example, OptionalGroup will be renamed OptionalGroup_1.

Migrating Subdocuments

The following issues apply to subdocuments during migrations:

- When migrating a document along with its subdocuments, you can select to migrate all or only the approved text pieces for the master document, as well as each subdocument.
- You can't import a master document unless you include its subdocument, or you have already migrated the subdocument.
- When migrating to a target category, xPression migrates any selected subdocuments to the target category even if the subdocuments and primary document are in different categories in the source content repository.
- When migrating a master document along with its subdocuments and a **Target Word Template** path specified, the new template path is assigned to the master document only. To change the Word Template for the subdocuments, list each subdocument and its new path individually on the page.
- When migrating a master document along with its subdocuments, you can specify a Version Effective Date or Version Withdraw Date for the master document, and separately for each subdocument. If an effective is not provided, the current date will be used.
- When overriding the data source of a master document in a subdocument/master document scenario, the subdocument data sources will also be overwritten. You must ensure that the subdocument and master document use the same schema. xPression will override the subdocument data source even when the subdocument uses a different data source group.

If You Copied Your Content Repository to Your Production Environment

If you copy your content repository from your development environment to any other environment and your content repository contains images for your documents, be aware that migrating your documents (and images) to your production environment forces xPression to create duplicates of your images.

Note: Clear any variables in the t_cruuid table in the new environment whenever copying the content repository.

When a content repository is copied, xPression has no record of a migration and cannot be sure that the image in your production content repository is the same image you are attempting to migrate.

For this reason, xPression does not overwrite this image. Instead, xPression creates a copy of this image and renames the new image by appending an underscore and a number to the end of the file name. For example, Signature_1.

Document Migration Options

To migrate an xPression document, click **Migrate** from the Utilities page and select **xPression Document**. You do not need to manually create a migration specification to migrate a document from xAdmin.

This page contains the following elements.

- Target Server, page 291
- Spec Path, page 291
- PDP Path, page 292
- Check Conflicting Items, page 292
- Overwrite Existing Content, page 292
- Status of Documents Migrated, page 292
- Source Category, page 292
- Available Documents, page 292
- Selected Documents, page 293

Click **Start** to begin the migrate process. xPression will post a message at the top of the xAdmin page when the migration has completed. To view the log file, open the xPression.log file and either the migration.log file (for migrations performed from xAdmin) or the migration_batch.log file (for migrations performed from the command line) located in the xPression installation directory.

Target Server

The target server selected from the list of available xPression servers. This list is populated by the contents of the MigrationServer.xml file that resides in the xPression installation directory on your application server. To make sure your target server appears in this list, see Setting Up the Target Server, page 301.

Spec Path

The path and file name for the migration specification. During migration, xPression will create the migration specification and save it to the path and filename you define here. Also, you can click Save and xPression will create a migration specification in this location without actually migrating the PDPX file. This enables you to run the specification at a later time.

PDP Path

The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression Migrate creates the PDPX and saves it using the path and file name you defined.

Check Conflicting Items

If your package contains category information, this option enables xPression to determine if it is safe to overwrite the existing data source schema. xPression will provide a warning if the existing schema contains fields used by Output Variables.

Overwrite Existing Content

Select this option if you want to overwrite an identical document on the target server.

Status of Documents Migrated

This feature is operational only when you select an xPresso for Word workflow enabled category. Use this drop-down list to define the workflow status of the documents that appear in the Available Documents list. You will be able to select document statuses that are equal to or higher than what is defined in the MigrateEnabledWorkflowStateThreshold property. See Controlling the Status of Migratable Documents , page 279 for more information.

Synchronize Document Migration Flag and Time

Use this option to enable or disable checking changes of existing text pieces in documents since the last migration. When this option is selected, all xDesign documents that need migration appear in bold in the Available Documents list. When this option is not selected, documents that only contain text piece changes appear in plain text in the Available Documents list. This option is selected by default.

Source Category

Select a category from the list of available categories. All documents from the selected category appear in the Available Documents list.

Available Documents

Select the documents in the Available Documents list that you want to add to the export list. Under each document is a list of the document’s versions, subdocuments, Universal Content, and Reusable Content. To include specific subdocuments, select those documents in the list. To include all the

subdocuments for a master document, click **Ctrl** as you select the master document. Click **Add** to move the selected documents and subdocuments to the Selected Documents list.

Documents appear in this list according to the following rules:

- Documents, subdocuments, and Universal Content appear in the list if their status matches your selection in Status of Documents Migrated, page 292.
- All qualifying versions of the document appear underneath the document name. If you select the document name for inclusion in the migration package, xPression will select the latest version of the document.
- If you select a version of document, xPression will include that version in the migration package.
- Reusable content appears in this list, but is not selectable. It is included in this list to show which Reusable content is embedded in the document. The embedded content will be migrated with the document.
- If the Universal Content item is enabled for Effective Date Processing, xPression will display the latest version from each trunk. If Effective Date Processing is not enabled, xPression will display only the latest version available, regardless of which trunk it comes from.

To view the subdocuments and universal content contained in a document, click the plus sign next to the document.

Selected Documents

The list of documents and subdocuments to be included in the export. In this area you can choose to give the target category a new name, and select the approval status for the documents. The options are:

- **`Document`** — The list of documents and corresponding subdocuments that will be exported. Remove documents by selecting their check box and clicking **Remove**.
- **`Version`** — Identifies the version number of the selected document.
- **`Category Info`** — Tells xPression to name the target category the same name as the name of the source category. If there is already a category of that name on the target server it will be overwritten. If this option is cleared, then you can enter a new name in the Target Category box.
- **`Approval`** — Send only documents that have been **Approved**, or **All** documents in the export.
- **`Target Word Template`** — Type the path and name of the word template to use on the target server. This is useful when changing the location of your word template or if you are switching to a new template entirely. Supplying the template path in this field relieves you from the chore of updating the template path in xDesign for each exported document.
- **`Version Effective Date`** — xPression simulates a "Generate XML" and "Create Document Version" after importing a document. The Version Effective Date will be attached to the new Document Version.
- **`Version Withdraw Date`** — xPression simulates a "Generate XML" and "Create Document Version" after importing a document. The Version Withdraw Date will be attached to the new Document Version.

- **`Target Category`** — Names the category at the target location to something different than the source category name if you type the new name here. This edit box is available only when the Category Info check box is cleared.
- **`Include Fonts`** — Choose Yes or No to migrate your fonts from the development to production environments.

Job Definitions

To migrate a job definition, click **Migrate** from the Utilities page and select **job definition**. You do not need to manually create a migration specification to migrate a job definition from xAdmin.

The Export utility contains the following elements.

Element Name	Description
Target Server	The target server selected from the list of available xPression servers. This list is populated by the contents of the MigrationServer.xml file that resides in the xPression installation directory on your application server. To make sure your target server appears in this list, see Setting Up the Target Server, page 301.
Spec Path	The path and file name for the migration specification. During migration, xPression will create the migration specification and save it to the path and filename you define here. Also, you can click Save and xPression will create a migration specification in this location without actually migrating the PDPX file. This enables you to run the specification at a later time.
PDPX Path	The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression creates the PDPX and saves it using the path and file name you defined.
Available Job Definition List	This list shows all available job definitions on your source content repository. Select the job definitions you want to export and click Add to move them to the selected job definition list.
Selected Job Definitions List	This table shows the job definitions you selected for export. You can remove job definitions from this table by selecting the check box next to the job definition and clicking **Remove**.
Include Output Profiles	Select this option to include all output profile information associated with this job definition.

To migrate the job definitions, make your selections and click **Start**. When the migrate process completes, xPression displays a completed message. To view the log file, open the xPression.log file and either the migration.log file (for migrations performed from xAdmin) or the migration_batch.log file (for migrations performed from the command line) located in the xPression installation directory.

Note: When migrating distribution definitions, xPression resets the Output Directory for Print Files to the default path. The default path for xPublish is: C:\xPression\Publish\Output\

Preventing Errors

To prevent errors from causing your import to fail, use the following tips.

Issue	Suggestion
Missing Files	Ensure all of your supporting output management files reside in their proper locations. If a file is missing, the import will fail and write an error either to the migration.log file (for migrations performed from xAdmin) or the migration_batch.log file (for migrations performed from the command line).
Migrating from Different Platform	If you are migrating between different platforms (for example Windows to Solaris), ensure that your font files are suitable for your target environment. You may need to move the files manually. For more information about these types of platform specific files, see the *xPression CompuSet Reference*.
Overwriting Job Definitions	You cannot overwrite an existing job definition or any of the output management settings by importing. If the name of your job definitions or output management files already exist in your target content repository, the PDPX will not import. To import the PDPX, you must rename the file that currently resides in your content repository, or import the file using the command line and the Update parameter. For more information on this topic, see Import, Export, and Migrate a Job Definition from the Command Line.
Category and Data Source on the Target Server	Job definitions reference data sources. Therefore, you must set up your data sources on the target server.

Output Profiles

To migrate an output profile, click **Migrate** from the Utilities page and select **output profile**. You do not need to manually create a migration specification to migrate an output profile from xAdmin.

The Migrate utility contains the following elements.

Element Name	Description
Target Server	The target server selected from the list of available xPression servers. This list is populated by the contents of the MigrationServer.xml file that resides in the xPression installation directory on your application server. To make sure your target server appears in this list, see Setting Up the Target Server, page 301.

Element Name	Description
Spec Path	The path and file name for the migration specification. During migration, xPression will create the migration specification and save it to the path and filename you define here. Also, you can click Save and xPression will create a migration specification in this location without actually migrating the PDPX file. This enables you to run the specification at a later time.
PDPX Path	The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression creates the PDPX and saves it using the path and file name you defined.
Available Output Profile List	This list shows all available output profiles on your source content repository. Select the output profiles you want to export and click **Add** to move them to the Selected Output Profile list.
Selected Output Profiles List	This table shows the output profiles you selected for export. You can remove output profiles from this table by selecting the check box next to the output profile and clicking **Remove**.

To migrate the output profiles, make your selections and click **Start**. When the migrate process completes, xPression displays a completed message. To view the log file, open the xPression.log file and either the migration.log file (for migrations performed from xAdmin) or the migration_batch.log file (for migrations performed from the command line) located in the xPression installation directory.

xEditor Configuration

To migrate an xEditor Configuration, define the following settings and click **`Start`**.

- Target Server — The target server selected from the list of available xPression servers. This list is populated by the contents of the MigrationServer.xml file that resides in the xPression installation directory on your application server. To make sure your target server appears in this list, see Setting Up the Target Server, page 301.
- Spec Path — The path and file name for the migration specification. During migration, xPression will create the migration specification and save it to the path and filename you define here. Also, you can click Save and xPression will create a migration specification in this location without actually migrating the PDPX file. This enables you to run the specification at a later time.
- PDP Path — The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression creates the PDPX and saves it using the path and file name you defined.
- Overwrite Existing Content — Select this option if you want to overwrite an identical document on the target server.

- Available xEditor Config — a list of xEditor Configurations that currently reside on the source server. These configurations can be migrated to your target server. Select one or more configurations and click **Add** to add them to the Selected xEditor Config list.
- Include Toolbar/Ribbon Settings — Select this option if you want to migrate any Toolbar or Ribbon settings you have defined.
- Include carry forward configs — Select this option if you want to include the xAdmin Auto Carry Forward configuration in the PDPX.

QuickPick

To migrate a QuickPick, define the following settings and click **Start**.

- Target Server — The target server selected from the list of available xPression servers. This list is populated by the contents of the MigrationServer.xml file that resides in the xPression installation directory on your application server. To make sure your target server appears in this list, see Setting Up the Target Server, page 301.
- Spec Path — The path and file name for the migration specification. During migration, xPression will create the migration specification and save it to the path and filename you define here. Also, you can click Save and xPression will create a migration specification in this location without actually migrating the PDPX file. This enables you to run the specification at a later time.
- PDP Path — The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression creates the PDPX and saves it using the path and file name you defined.
- Overwrite Existing Content — Select this option if you want to overwrite an identical document on the target server.
- Available QuickPick — a list of QuickPicks that currently reside on the source server. These QuickPicks can be migrated to your target server. Select one or more QuickPick and click **Add** to add them to the Selected QuickPick list.

Channel

To migrate a Channel, define the following settings and click **Start**.

- Target Server — The target server selected from the list of available xPression servers. This list is populated by the contents of the MigrationServer.xml file that resides in the xPression installation directory on your application server. To make sure your target server appears in this list, see Setting Up the Target Server, page 301.
- Spec Path — The path and file name for the migration specification. During migration, xPression will create the migration specification and save it to the path and filename you define here. Also, you can click Save and xPression will create a migration specification in this location without actually migrating the PDPX file. This enables you to run the specification at a later time.

- PDP Path — The path and file name for the PDPX. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters. xPression creates the PDPX and saves it using the path and file name you defined.
- Overwrite Existing Content — Select this option if you want to overwrite an identical document on the target server.
- Available Channel — a list of Channels that currently reside on the source server. These Channels can be migrated to your target server. Select one or more Channel and click **`Add`** to add them to the Selected Channel list.

Migration Timeouts

If the timeout value in migration.properties is not sufficiently long to accommodate your imports you will encounter errors and the migration will fail. The error that you will receive depends upon what part of the migration is being processed, so the exact error cannot be known in advance.

Note: The timeout value in migration.properties affects migrations using migrate.bat only. The timeouts established in the installation are for xAdmin migrations.

If you are receiving errors when using migrate.bat, change the timeout value in migration.properties to a value equal or greater than the longest time required for any import, in seconds. Usually this will be between 1800 (30 minutes) and 3600 (1 hour), but may vary considerably from that norm. In general it is safer to set the value too high. The risk of setting the value too high is a delay in recognizing that an actual fault has occurred.

When troubleshooting this problem, note the start and end times of the migration. If the elapsed time is equal to your timeout value, increase the value and try again.

Migration Overrides

Migration overrides occur when a current migration is inconsistent with a previous migration. The PDP contains three elements that contribute to an override condition:

- CRUUID (Content Repository Unique Usage Identifier)
- Document ID
- Document Name

An override will occur in cases where there was a previous migration if any of the following are true:

- CRUUID IS the same on the target, the Document ID DOES NOT exist on the target, and the Document Name DOES exist on the target.
- CRUUID IS NOT the same on the target and the Document Name DOES exist on the target.

Otherwise the import will proceed without an override

Overrides are not desirable for two reasons:

- They greatly increase migration time.
- They introduce an increased likelihood of a timeout condition.

Override Scenarios

The following conditions may result in an override condition:

- The migration is being done from a new or different environment.
- The document was deleted and recreated in the source environment.
- A backup PDP was imported and an override occurred in the SOURCE environment.
- The document was manually deleted in TARGET environment and an existing copy was renamed in its place.
- A document with the same name was manually created in the target environment.

Override Messages

Override messages should researched whenever they occur. Before proceeding with an override the following should be verified:

- The PDP is from the correct environment.
- The correct PDP is being imported.
- If applicable determine the cause for the change of Document ID on the source environment and correct if appropriate.

Overriding Documents

When you override a document after migration, the imported document becomes a brand new document even though it holds the same name as the document that was overridden. They are two entirely distinct documents. For that reason, the former relationship between the old document and an output profile is no longer valid for the new document. If you want to restore the relationship, you must import the related output profiles again.

Overriding Output Profiles

When overriding an output profile, xPression will display a list of all output profile items that conflict in some way with the existing items on the target server. The are two categories of conflicts:

- The importing PDP contains an item whose name matches the name of an item already on the server, but the items were created on different servers. This occurs in environments where users

create items on multiple servers and accidentally create an item with the same name as an item on another server.

- The importing PDP contains an item whose name matches the name of an item already on the server. Additionally, these items were created on the same server, but they have different output profile item IDs. This situation occurs when a user deletes and recreates an item on the source server after they have previously exported the item to the target server.

You can click **Start** to accept the conflicts and override the output profile items. Or you can click **Cancel** to fix the conflicts by renaming the items before importing the PDP.

The first time you import a PDP after upgrading from a pre-xPression v4.0 envrionment, there will be no migration history records in the database. If you import a PDP that contains output profile items with same the name as existing items, those items will appear in the list of conflicts. Additionally, if the PDP you are importing was created prior to xPression v4.0, the CRUUID will not be displayed in the list.

Overriding Category Info

If you are importing a PDP with category information that overrides the data source schema by removing fields that are in use by output variables, xPression will display the following information:

- A Warning indicating that the contents of the PDP conflict with the contents in the target environment.
- A list of fields in the current data source that will be removed by the import override, but are currently in use by output variables.
- A list of fields in the current data source that will be changed by the import override, but are currently in use by output variables.

To continue with the override and either remove or change the fields that are currently in use, click **Start**. To cancel the override, click **Cancel**.

Migration and Sub-documents

When an override occurs on a sub-document all master document links to the sub-document are broken. Therefore, migrating master documents is mandatory when overriding a sub-document.

xRevise, xResponse, and Queue for Batch

An override will not be allowed if any of the following conditions exist:

- There are any completed work items or pending work items in xRevise tied to a document version
- There are any pending works in progress in xResponse tied to a document version.
- There are any pending Queue for Batch items tied to a document version.

Command Line Migrations

To perform command line migrations, please see the *xAdmin Integration Guide*.

Setting Up the Target Server

Before you can migrate from one xPression server to another, you must set up your MigrationServer.xml file with connection information for the target server.

Your MigrationServer.xml resides in the xPression installation directory on the server that contains the source output profiles. The syntax of MigrationServer.xml is as follows.

```
<ServerList>
<Server name="xpression server 1" url="http://12.64.121.45:9081"
context=”/xAdmin” uid="" password="" socketport="5678" />
<Server name="xpression server 2" url="http://12.64.121.25:9081"
context=”/xAdmin” uid="" password="" socketport="5678" />
</ServerList>
```

For your target server, add the following parameters to your MigrationServer.xml.

Parameter	Description
Server name	Type a descriptive server name for your target server.
url	Type the URL for your target server, including the port number.
context	If the target server is an earlier version of xPression (version 2.1.2 or earlier) the value should be xPressionAdmin. For example: context=”/xPressionAdmin” If the target server is version 2.5 or higher, the value should be xAdmin. For example: **context=”/xAdmin”**
uid	If a user ID is required to access xPression Admin, supply the user ID here.
password	If a user ID is required to access xPression Admin, supply the user ID password here.
socketport	Type the socketport number for your target server.

Save your MigrationServer.xml file. You should now be able to see the descriptive name of your target server in the Target Server drop-down box.

Chapter 11

Supportability Tools

Supportability tools enable you to import, export, and purge work items from the xRevise or IDDK Work in Progress queue. Supportability tools are similar to Utilities, but work items cannot be migrated as is the case with documents, xEditor configurations, job definitions, and output profiles, so migration specifications are not relevant to the Supportability tools. This page appears only if you have a license for xRevise or IDDK, and have permission to access it. See your xPression administrator for permission. Supportability tools consist of the following:

- Import
- Export
- Purge

Import and export are similar to the import and export utilities for documents in that the transfer is accomplished using the Portable Document PackagePDPX file and the interface is similar. Purge is unique to Supportability tools.

Note: You can only use the Supportability tools under the direction of EMC Document Sciences Technical Support representatives.

Import

The Import tool enables you to import xRevise and IDDK work items into the xPression database. To access the Import tool, click **Import** from the Supportability Tools menu. The Import tool contains the following elements:

- **Cancel.** Exits the Import page and resets the Import tool page.
- **Start.** Click Start to begin the import process.
- **PDP Location.** Specifies if your PDPX is located locally on the xPression Server, or remotely on an xPression client. Select the correct option for your PDPX file.

  The xPression server that contains your target content repository must be able to access the directory where your PDPX resides.
- **PDP Path.** The path(s) and filename(s) for the PDPX(s) you want to import. PDPX file names must be 1–255 English characters in length, and can only contain alphanumeric characters (A-Z, a-z, 0-9), parentheses (()), apostrophes (’), single quotation marks (’), underscores (_), dashes (-), and spaces. PDPX file names can’t contain non-English characters.

You can import more than one PDPX at a time by clicking **Add** to add a new row to the PDPX Path table.

To remove a row from this table, select the row and click **Delete**.

When all PDPX files have been identified in the list under PDP Path, click **Start** to begin the import. A message will appear near the top of the page when the process is complete.

Export

You can export work items from your content repository using the Export function on the **Supportability Tools** menu.

Export Work Item Options

To export one or more work items, click **Export** from the Supportability Tools page .

This page contains the following elements:

- **Purge work items after export.** The work item is purged from the xPression database after export. Work items that are not purged continue to occupy space in the database.
- **Create document information xml for work items.** Creates an XML file at the specified location populated with information relevant to the exported work items. This process can adversely impact performance, so this option should be used only when needed.
- **Create specification xml.** Creates an XML file populated with information relevant to the export. This information can be used to replicate the export.
- **PDP Path.** The path and file name of the PDPX file.
- **Category.** A drop-down list of all available categories. Select a specific category, or select All Categories to determine from which category the work items should be selected.
- **Completed.** Populates the list with work items that are Completed.
- **Advanced Find.** Opens Advanced Find, which enables you to further refine the list of work items. See Advanced Find, page 305.
- **Work Item List.** The current list of work items. Select/deselect a work item by clicking the associated check box.
- **Add.** Adds the selected work item(s) to the list of work items to be included in the export.
- **Export List.** The list at the bottom of the page shows all work items that have been selected for export. To remove a work item from the export list, select it and click **Delete**.

Select all work items that should be included in the export and then click **Add**. Click **Start** to begin the export process. xPression will post a message at the top of the xAdmin page when the export has completed. To view the log file, open the xPression.log file and either the migration.log file (for migrations performed from xAdmin) or the migration_batch.log file (for migrations performed from the command line) located in the xPression installation directory.

Purge

The Purge tool enables you to purge xRevise and IDDK work items from the xPression database. Outdated work items occupy space in the database, and purging them periodically recovers this space. To access the Purge utility, click **Purge** from the Supportability Tools menu. The Purge tool contains the following elements:

- **Cancel.** Exits the Purge page and resets the Purge tool page.
- **Start.** Click Start to begin the import process.
- **Create document information xml for work item.** Creates an XML file with information related to the work items that were purged.
- **XML File Name.** This element opens when Create document information xml for work item is selected. Provide the path and file name for the XML file.
- **Category.** A drop-down list of all available categories. Select a specific category, or select All Categories to determine from which category the work items should be selected.
- **Completed.** Populates the list with work items that are Completed.
- **Advanced Find.** Opens Advanced Find, which enables you to further refine the list of work items. See Advanced Find, page 305.
- **Work Item List.** The current list of work items. Select/deselect a work item by clicking the associated check box.
- **Add.** Adds the selected work item(s) to the list of work items to be purged.
- **Purge List.** The list at the bottom of the page shows all work items that have been selected for purge. To remove a work item from the purge list, select it and click **Delete**.

When satisfied with the list of work items to be purged click **Start** to begin the process. A message opens near the top of the page when the process is complete.

To purge large numbers of item use the batch utility provided. See Purging WIP Items from the Command Line, page 309. You can use the copy option to develop a search with the user interface and then use the command-line option to purge large numbers of WIP items. The UI is intended for purging smaller numbers of WIP items, and should be limited to purge actions involving no more than approximately 100 items.

Note: If you encounter a number format exception when using the Purge utility, run the Scan and Delete Orphaned Data utility first. For more information about the Scan and Delete Orphaned Data utility, refer to the Technote for this utility at http://support.emc.com.

Advanced Find

The Advanced Find utility enables you to refine your list of work items based on the value of a field or combination of fields. The list can be further refined to fall within a date range. To search within completed work items, select **Completed**. Otherwise, the search will include active work items.

Type a value in the text field in the top section and then select the field that should contain the value from the list. To conduct a complex search click the **Add** button. This will open the Operator list and

add a new value-field pair. There are two operators available: AND and OR. See The AND and OR Operators, page 307 for a simple explanation of how to use the operators.

To restrict the search return to a range of dates, select one of the options from the **Date Range** list. You can choose:

- all
- items older than
- items newer than
- items modified between

If **Absolute Dates** is selected, choose a date from the calendar tool or tools. If **Relative Dates** is selected choose an interval and provide a number of intervals. For example, older than 6 months or modified between 3 days and 4 months.

Set the order by selecting a field from the list under **Order By**. You can add more fields and apply grouping to the list of returned work items by clicking **Add**.

The AND and OR Operators

Advanced Find uses two Boolean logic search operators, AND and OR, to link two or more item rows in an Advanced Find query.

Use the AND operator to search for work items that satisfy two conditions. The AND operator directs xRevise to retrieve a work item if it contains both the first and second search items. Use AND to narrow your search.

For example, applying the search where the vehicle year is “2008” AND the vehicle make is “Ford” against these records:

```
<Customer>
 <Customer Demographic>
  <PK_Customer_ID>1</PK_Customer_ID>
  <Name>Adam Adams</Name>
 </Customer Demographic>
 <Vehicle>
  <Vehicle_Year>2009</Vehicle_Year>
  <Vehicle_Make>Ford</Vehicle_Make>
  <Vehicle_Model>Mustang</Vehicle_Model>
 </Vehicle>
</Customer>


<Customer>
 <Customer Demographic>
  <PK_Customer_ID>2</PK_Customer_ID>
  <Name>Betty Brown</Name>
 </Customer Demographic>
 <Vehicle>
  <Vehicle_Year>2008</Vehicle_Year>
  <Vehicle_Make>Chevrolet</Vehicle_Make>
  <Vehicle_Model>Camaro</Vehicle_Model>
 </Vehicle>
</Customer>


<Customer>
 <Customer Demographic>
  <PK_Customer_ID>3</PK_Customer_ID>
  <Name>Cathy Carlson</Name>
 </Customer Demographic>
```

```
 <Vehicle>
  <Vehicle_Year>2008</Vehicle_Year>
  <Vehicle_Make>Ford</Vehicle_Make>
  <Vehicle_Model>Focus</Vehicle_Model>
 </Vehicle>
</Customer>
```

The search in this example would return Cathy Carlson's record, ID 3. ID 1 meets the "Vehicle Make" test, but not the "Vehicle Year" test, and record 2 meets the "Vehicle Year" test but not the "Vehicle Make" test.

Use the OR operator to search for work items that meet either of two specified conditions. The OR operator directs xRevise to retrieve a work item when it satisfies either the first or second search item, or both. Use OR to broaden your search.

Using the same records as in the AND example above, but searching for records where the vehicle year is "2008" OR the vehicle make is "Ford", all three records would be returned since record 1 meets the "Vehicle Make" test and records 2 ad 3 meet the "Vehicle Year" test. Vehicle 3 meets both tests, but is returned only once since the OR operator is satisfied by the first test and the second need not be considered. From this example it is clear that AND is more restrictive than OR since a record must satisfy each of the AND operator's tests, but only one of the OR operator's tests.

Wildcard Characters

A wildcard character is a keyboard character that is used to represent one or more characters in a search statement. You can use a wildcard character to search for all derivations of a search word. This is a useful function if you're uncertain of the possible endings of a search word. When your search statement includes a wildcard character, the number of potential references increases.

Wildcard characters can be used in searches to return text that contains a specified string. For example, the search string "*doc*" would return "doctor", doctrine", document", "indoctrinate", and so forth.

In xPression the asterisk (*) or the percent sign (%) can be used as the wildcard character for multiple characters and the question mark (?) or the underscore (_) for single characters. Some databases use the asterisk and question mark, others use the percent sign and underscore. xPression automatically uses the correct wildcard for your database, so in environments using Oracle or DB2 the asterisk is replaced behind-the-scenes with a percent sign automatically. To include a wildcard character in the search as a literal value, precede it with the pipe character (|). For example, to search for "A*3" use: A|*3. To search for a pipe character, use two pipe characters: ||.

There is a limitation with SQL in that the wildcard is only recognized when placed after the specified string. For example, in a SQL database searching for "late" using the Contains Word or Phrase option would return "later" but would not return "elate." When a search string using the Exact Word or Phrase option is preceded with a wildcard character, the wildcard at the beginning is ignored when a SQL database is employed.

Copy

After satisfactorily running a search through the UI, you can click the **Copy** button to copy the current search in text form to the clipboard. You can past this into a script so that the search can be repeated

automatically from the command line. Refer to Purging WIP Items from the Command Line, page 309 for more information on purging WIP work items from the command line.

Purging WIP Items from the Command Line

WIP work items can be purged from the command line using one of two batch files, depending on your system: PurgeWIP.bat (Windows) or PurgeWIP.sh (UNIX). Both files are located in xPression.ear.

When executing the batch file, you must also provided the name and location of the purge file:

```
purgeWIP PurgeFilePath
```

The purge file is an XML file that can contain either a list of work item IDs to be purged (see XML Example, page 309), or search criteria that identifies the work items to be purged. Search criteria can be captured from a search tested through the Advanced Find Copy feature. See Advanced Find, page 305 for more information on conducting a search with Advanced Find and copying the test parameters.

You can optionally request that a purge report be generated during the purge process by using the – r argument:

```
-r ReportXMLFilePath
```

The following is an example of a complete command line purge WIP order for Windows using a criteria file to identify the work items to be purged:

```
purgeWIP d:\searchCriteria.xml -r d:\report.xml
```

XML Example

The following is an example from an XML file containing a list of work items to be purged:

```
<?xml version="1.0"?>
<WorkItems>
   <ID>19521</ID>
   <ID>20306</ID>
   <ID>21501</ID>
   <ID>21602</ID>
</WorkItems>
```

Chapter 12

System Management

System management contains a variety of utilities for configuring your xPression system. These utilities help you set up your xPression license, resolve locks resulting from server communication interruptions, and configure some global xPression settings.

If you do not see this menu, or any of the submenus, in the xAdmin interface, you do not have permission to access them. See your xPression administrator for access.

The System Management page displays the version number and build number of the current xPression Server installation. This information is useful if you need to contact EMC support with an issue or question.

Locales

Locales are optional settings that help to make your documents understandable across international, regional, and cultural borders. Their main function is to apply regional date and numeric formatting to the variable replacement data xPression Design users insert into their documents.

A locale's main function is to apply regional date and numeric formatting to variable replacement data. Variable replacement data is data from your data source that is placed into your documents. The data is variable because the data value placed into your documents is specific to the current customer record. Locales automatically apply formatting to this variable data to meet the formatting conventions of the country or region where your customer resides.

For example, a German customer might be accustomed to seeing a period symbol used as thousands separator (15.000.000 DM), and a comma as a decimal (25,6˚C). A German locale would enable the xPression Design user to format the data placed in her document to meet the expectations of a German-speaking reader while not affecting the way the data appears to a customer from the US.

If your company produces documents in several languages, you may need to define several locale settings. EMC Document Sciences supplies a complete listing of international locale values.

How xPression Handles Locales

Locales are associated with languages. To more clearly define your formatting to specific regions, xPression enables you to associate more than one locale with a language. For example, the English Language could have a United States English and a United Kingdom English Locale. Whenever a

document designer uses a Language attribute with more than one Locale associated to it, xPression prompts them to choose the desired Locale.

xPression ships with the following default Locale values:

- en_US (United States English)
- fr_FR (French)
- de_DE (German)
- es_ES (Spanish)

Locale Options

To access locales, click **Locales** from the **System Management** menu. xPression displays a list of existing locales and a drop-down list of available language/locale pairs. In the list of language/locale pairs, the languages appear first, followed by the locale in parenthesis. This page contains the following elements.

Element Name	Description
Add	To add a locale, select one from the locales drop-down list and click **Add**. The Language/Locale pair is added to the list. If the language already exists in the list, the additional Locale is added to the existing language. When you click Add to add a locale, the locale is directly added to your content repository, even if you click Cancel afterwards. The Save and Cancel buttons on this page apply to changes you make to the languages of the locale.
Language/System Default	System Default is used by a variable replacement if the attribute set doesn't have a Language default, and if the user hasn't chosen a locale in the replacement definition. Language Default is the default used for a Language attribute if the content item doesn't have the language explicitly defined.
Language Alias/Locale Description	The Language Alias and Locale Description can be modified in the appropriate edit box. The descriptors you type in these boxes become the names of the language and locale attributes as displayed in xDesign.

Creating Locales

To create your locales:

1. To access locales, click the **System Management** menu and then click **Locales**. xPression displays a list of existing locales and a drop-down list of available language/locale pairs. The Actions toolbar contains a list of available locales. The Locales page displays all existing locales.
2. To add a locale, select one from the locales drop-down list. Click the down arrow in the Actions toolbar to display the available locales.

3. Click **Add.**
4. The Language/Locale pair is added to the list. If the language already exists in the list, the additional Locale is added to the existing language. As you can see, a Language attribute is added to your xPression environment when you add at least one locale.

Making Changes to Locales

Any time you make changes to Locales, be sure you notify the document designers. They will need to regenerate XML and update document versions so that they are accurately saved in the content repository.

License Management

Your xPression license agreement grants you a certain number of "seats" for the server, xPression Batch, and client applications such as xDesign and xResponse. An xPression license key is linked to the unique IP address of the computer on which the xPression application is installed. This relationship is established during installation.

You can enter new license files through **License Management**. When your license expires, or if you upgrade your license to include additional seats, you'll be directed to supply a new license file in the **Enter New License** box. New users will receive their license file (license.xml) through an e-mail from EMC Licensing.

Server Restart Requirement After Updating License

The license check process has been improved so that the time required to verify the license during transaction publishing. As a result of the improvements, it is necessary to restart the xPression servers in clustered environments after updating the license. This is not required in single-server instance environments.

Updating a License

To update your license with a new license key file:

1. Click **Browse**. Locate and select the license key file (license.xml) provided to you by EMC Document Sciences.
2. Click **Open**. The file path appears in the Select License File field.
3. Click **Save**.

Note: If you are using Microsoft Internet Explorer 8, you will not be allowed to type a path directly into the Enter New License field; you must use the browse button to locate the file.

CheckVersion Utility

In order to help debug your environment or to determine your proper upgrade path, EMC Document Sciences has added the CheckVersion utility to the xAdmin System Management menu. This utility gathers relevant information about your xPression environment and packages this information for your EMC Document Sciences representative.

What Information Does it Gather?

This utility captures the following information about your xPression environment:

- Information about the location and modified date for your xPression system files
- The unique machine name/ID of the xPression Server
- The xPression Server operating system
- JVM information
- Information about your Java version
- The application server type of the xPression Server

How Does it Work?

To run the CheckVersion utility:

1. Start xAdmin and click the **System Management** menu.
2. Click **CheckVersion Utility**. The CheckVersion Utility page appears
3. In the "The output path for the checksum.xml file" box, supply an output path for the checksum.xml file. This file contains information about your xPression environment in xml format.
4. You can also select the "Zip up the property files to the path of the checksum.xml file" option. This option gathers all of the xPression properties files into one .zip archive. The archive is saved to the same location you defined for the checksum.xml file.
5. To run the utility, click **CheckSum**.

Service Management

The Service Management section enables you to easily start or stop xPression services. The xPression Distribution Service and the xResponse temporary folders cleanup service can be started or stopped on this page.

Chapter 13

User Management

The User Management area enables you to manage roles and user access. It also enables the super administrator to change their password. If you are not the super administrator, you will only see this area if you have been granted access. Contact your xPression administrator for access. See the following topics:

- Roles, page 317
- Users, page 319
- Changing Passwords, page 320

Roles

Roles define a set of user access rights to specific areas of the xAdmin and xDashboard user interfaces. You should create a role for each type of user that will be using xAdmin and xDashboard. Roles enable you to apply the same set of access rights to different users, without having to define individually them for each user.

Each area in the xAdmin and xDashboard user interface is available for selection when defining the access rights for a role. To define a role, simply select the areas that the specific type of user will need to access.

The Roles area of User Management enables you to create and manage xAdmin roles. If you do not see this area in the xAdmin interface, you have not been granted access. Contact your xPression administrator for access.

Creating a Role

You can create as many roles as necessary for your environment. Ensure that you give each one a descriptive name so it will be obvious which type of user should use the role. Users can be assigned multiple roles.

To create a role:

1. Click the **User Management** menu and then click **Roles**. xPression displays the list of existing roles.
2. Click **Add**.

3. Type a name for the role. Make sure it is descriptive.
4. Select the check box in the Allowed column for all the areas to which this type of user will need access.

   If they need access to all the areas in the interface, select the top check box next to Allowed, and all the areas are automatically selected.

   If they need access to all the sub-areas in a specific area, select the check box for the name of the area, and all the sub-areas are automatically selected.
5. Click **Save**.

Modifying a Role

You can make changes to a role once it has been created. If the role is in use, those users assigned to the role will be affected by the change, and may no longer have access to areas within xAdmin or xDashboard.

To modify a role:

1. Click the **User Management** menu and then click **Roles**. xPression displays the list of existing roles.
2. Click the name of the role that you want to modify.
3. Make any changes to the name of the role, or the access areas.
4. Click **Save**.

Deleting a Role

You can delete an existing role. If the role is in use, those users assigned to the role will be affected by the change, and may no longer have access to areas within xAdmin or xDashboard.

To delete a role:

1. Click the **User Management** menu and then click **Roles**. xPression displays the list of existing roles.
2. Select the check box next to the name of the role that you want to delete.
3. Click **Delete**.

   If the role is in use, any users assigned to the role will be affected by the removal of the role immediately, and may no longer have access to areas within xAdmin or xDashboard. A confirmation dialog box appears to inform you that the role is in use.

   If the role is not use, it will be permanently deleted from the system. A confirmation dialog box appears to inform you that the role will be deleted, and can not be restored.
4. Click **OK** on the confirmation dialog box to continue with the deletion.

Users

The users managed in the Users area are xPression system users that are allowed access to xAdmin or xDashboard. Users can be assigned roles, or they can have access to the entire xAdmin and xDashboard interfaces by default.

To ensure that you have the correct group of users from which to select, see the section about enabling security for xAdmin and xDashboard in the *xPression Installation Guide*.

The Users area of User Management enables you to add users to xAdmin and assign their access rights. If you do not see this area in the xAdmin interface, you have not been granted access. Contact your xPression administrator for access.

See the following topics:

- Add User, page 319
- Assign User Roles, page 319
- Deleting Users, page 320

Add User

Users must be added before they can access xAdmin. Users can have the default access rights, which enable them to access the entire xAdmin and xDashboard interfaces, or you can assign roles to the users that enable access to only specific areas in the interfaces.

To add a user:

1. Click the **User Management** menu and then click **Users**. xPression displays the list of existing xAdmin users.
2. Click **Add User**.
3. Select the user that you want to add to xAdmin from the list of available users. You can type text in the Filter box to filter the list to show a smaller group of users. Click **Delete** to clear the filter and reset the list.
4. Click **Save**.
5. Next, assign roles to the user. See Assign User Roles, page 319

Assign User Roles

Roles enable you to limit the areas to which specific users have access. You can assign any xAdmin user one or more roles. You can also remove roles from users.

To manage roles:

1. Click the **User Management** menu and then click **Users**. xPression displays the list of existing xAdmin users.

2. Select the check box next to the user to which you want to assign a role.
3. Click **Assign Role**.
4. Select the check box for the roles that you want to assign to this user, or clear the check box for any roles you want to remove from the user.
5. Click **Save**.

Deleting Users

You can delete an existing user.

To delete a user:

1. Click the **User Management** menu and then click **Users**. xPression displays the list of existing users.
2. Select the check box next to the name of the user that you want to delete.
3. Click **Delete**.
4. Click **OK** on the confirmation dialog box to continue with the deletion. Once a user is deleted from xAdmin, it can not be restored.

Changing Passwords

The Change Password area of User Management is only visible for the super administrator user, and enables that user to change their own password. Regular xAdmin users should contact their xPression administrator for information about changing their passwords. If you are the super administrator, and you have forgotten your password, see the *xPression Installation Guide* for information about resetting the password.

Note: User names can not contain non-English characters.

To reset your super admin password:

1. Click the **User Management** menu and then click **Change Password**.
2. Type your existing password.
3. Type a new password.
4. Type your new password again to confirm.
5. Click **Save**. xAdmin closes; use your new password to log in again.

Chapter 14

Gathering Information About Your Server

When you contact Technical Support with a problem, they will ask for details about your installation and server configuration. To help you provide these details, xAdmin includes a support utility that you can use to quickly display this information. You can access the utility through the following URL while your xPression Server is running:

`http(s)://<server_or_IP>:<port>/DSExplorer`

where <*server_or_IP*> is the server name or IP address of the xPression Server, and <*port*> is the server port number.

The utility contains five tabs of information:

- OS, page 321
- Application Server, page 322
- Database, page 322
- JVM Settings, page 322
- xPression Settings, page 323

Each tab contains a link to capture all of the information from each of the tabs in an XML file, and to package that XML file into a zip file along with all xPression properties files located in xPressionHome, and the xPression log.

OS

This tab contains the following information about your operating system.

- System Model
- System Type
- Available Processors
- OS Name
- OS Architecture
- OS Version
- Total Physical Memory

- Available Physical Memory
- User Name
- User Home Directory
- User Current Working Directory
- PATH — This is the server classpath

Application Server

This tab contains the following information about your operating system.

- Version — The version number of your application server.

Database

This tab contains the following information about your operating system.

- Vendor
- Version
- JDBC Driver Version
- Status

JVM Settings

This tab contains the following information about your operating system.

- Java Version
- Data Model
- Java Vendor
- Java Home
- Java Classpath
- Free Memory
- Max Memory
- Total Memory

xPression Settings

This tab contains the following information about your operating system.

- Version — The xPression version number
- Build — The xPression build number

Appendix A

Expressions and System Functions

xPression enables you to create expressions to apply logic to the output processing capabilities of the server. Within these expressions, you can use system variables, pre-defined system functions, and literal values.

This chapter will explain how to construct these expressions, how to use the available system functions, and help you understand how to successfully implement expressions by understanding how xPression performs output processing.

Overview of Output Processing

Simply put, output processing enables users to apply processing to their output. This includes features such as bar codes, multiple file output, conditions for including documents in the output, multiple imposition, separator sheets, and a variety of other features. These features apply to units of output, for example, document sections, pages and sheets, documents, packages, partitions, document streams, and more. This section describes these units of output, as well as other output processing features.

Simplex and Duplex

The plex mode is a characteristic of the output, which effects the number of sheets used in a job. Output processing enables you to set the plex mode for a stream, and will even let you change the plex mode within a stream (using markers). The current plex mode of a stream effects how pages and sheets are counted and how some variable values are read.

Simplex mode means that the printer will only print on the front side of a sheet (see next section) and every page will be on the front (or recto) side of the sheet. Therefore, a system Boolean variable like IsRectoPage will always be true in simplex mode, and similarly, IsVersoPage will always be false in simplex mode. Please ensure you are aware of the plex setting when building conditions for the various features in output processing.

Document Section

The smallest unit addressable by an output processing feature is a document section, or a Section rule in xDesign. The only features that can have an impact at this level are recipients and markers. Because these features take effect on full sheets of output, the document section that is associated with these features should typically be forced to start on a recto page (new sheet), especially in duplex mode.

Pages and Sheets

A “sheet” is a full sheet of paper. A “page” is one side of a sheet of paper, when multiple imposition (discussed later) is not used. When in simplex mode, where the printer will print on one side of a sheet of paper only, the page and sheet count are equal. However, in duplex mode, each sheet will have two pages, one on the front side of the sheet (recto side) and one on the back side of the sheet (verso side).

Document

A document is the second most basic unit (after document sections) from the view of output processing. A document is one instance of an xDesign application or xPresso client document. It could be any one of these types of units instantiated for one particular customer.

Package

A package is one or more documents that are typically intended for one customer. At the most basic level, a package can be one document. However, through sorting and grouping, a number of documents can be collected together into a package. In order to create a multiple document package, there must one output processing variable value in common to all the documents in the package, typically something like the customer id. All documents in a stream are sorted on that variable, which re-orders the documents in the output, and then units of packages are created based on the change of the same variable as documents are output in a particular stream.

Many of the operations that output processing does are focused on the package unit. The inclusion condition for an output stream applies to the package. Content stamps are placed on the package based on a package condition, and/or page condition. System variables are all resolved at the package level. So, variables like TotalPagesInPackage and TotalSheetsInPackage are known when the first page of a package is encountered. This is not true for Partition or Stream variables.

Partition

A partition is simply a single output file. It could include all the packages in the stream, some of the packages, or just one package. The user can choose any of these options when partitioning a stream into output files. When a partition is designated by “maximum number of pages per file”, the output file will contain some number of packages up to the point where the next package

included would cause the maximum number of pages to be exceeded. When partitions are larger than packages, the Total*Unit*InPartition variables are not resolved until the end of the partition is processed. For example, TotalPagesInPartition will not be known until the last package in the partition is encountered. Therefore, such variables are really only useful in metadata, where they output statistics about the partitions.

Stack

A stack is what will be a sequential series of pages, when the sheets of a multiple imposition job are cut. Stacks are reassembled into the final correct page order. You can define a stack height to accommodate the cutting ability of the paper cutter that will be used.

Document Stream

A stream is the unit by which a particular output format and distribution is designated. It can also include an inclusion condition for each package. An output profile can have one or more streams. One example of using multiple streams is so that packages of particular page ranges can be distributed to different output files. The first stream might be for package of less then 10 pages, the second stream for packages of 10-15 pages, and the third stream for packages over 15 pages. Another use would be for multiple channels of output. The same documents could be output into one big file of AFP format for print distribution, while another stream can partition packages into individual files of PDF format for e-mail distribution. An output profile can be designed to output the same packages in multiple streams, or only particular packages in multiple streams. The Total*Unit*InStream variables are not resolved until the end of the stream is processed. For example, TotalPagesInStream will not be known until the last package in the stream is encountered. Therefore, such variables are really only useful in metadata, where they output statistics about the stream.

Expressions

Through a combination of operators, an expression is a statement that can be designed to represent a useful value, or be compared to determine if the statement is true or false. Values can be String, Numeric, or Boolean. Statements can include system functions, literals, variables, and operators. Expressions follow rules similar to programming languages or algebraic expressions.

Elements of an Expression

This section describes some of the basics of the types of elements used to create output processing expressions.

- Boolean – Evaluates values for the true or false condition. In comparisons, you must use a string literal for true and false, such as: IsRectoPage = “true”.
- String – Evaluates a single String.

- Numeric – Evaluates a number.
- Variables – Are generally predefined with an allowable pattern of numbers (0–9) and characters (A-Z, a-z, and _ (underscore)) to name them. They also have a type: Boolean, String or Numeric. Some variables can be used in different combinations of types, and also used as, for example, both a numeric and string value.
- Literal – Can be used for numeric expressions or string expressions. Literals have two types: String (a series of characters surrounded by double quotes) and Numeric (a combination of numbers and possibly a decimal point).

Operators

The following table describe the operators that can be used when building an expression.

Operator	Description
*	Multiplication
/	Division
%	Modulus
+	Addition
-	Subtraction
(	Open Paren
)	Close Paren
&&	Boolean AND
||	Boolean OR
!	Boolean NOT
=	Boolean equal
!=	Boolean not equal
>	Boolean greater than
>=	Boolean greater than or equal to
<	Boolean less than
<=	Boolean less than or equal to
+	String concatenation

Best Practices

This section contains best practices and other important information about using system functions and system variables:

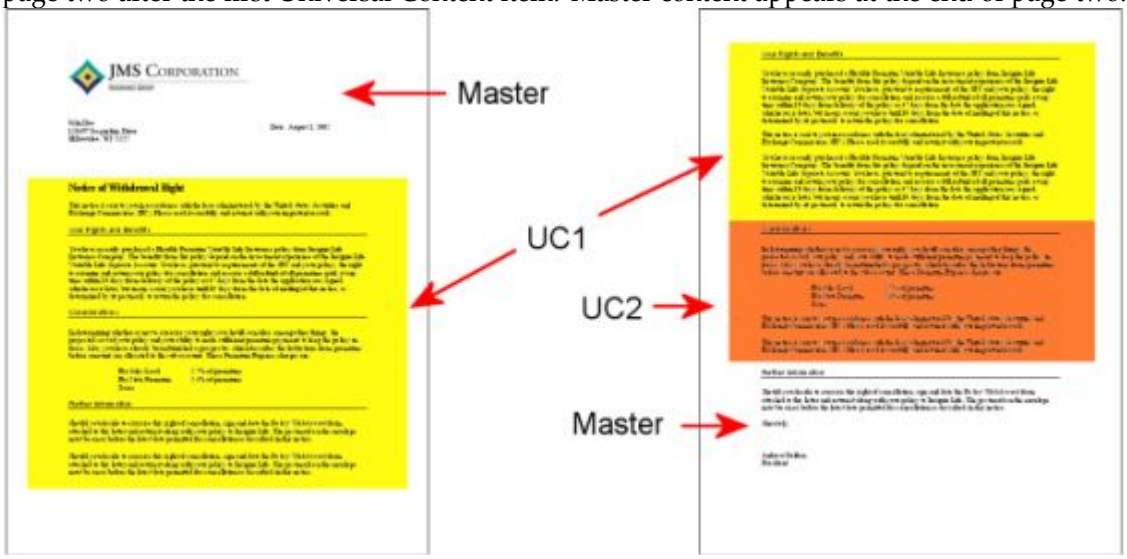
- Working with Sub-Page Content, page 329
- About CurrentPage and TotalPage Functions, page 330

- Uniquely Identify Output, page 330
- Example: Identifying Specific Pages, page 330
- Example: Detect Beginning and End of a Subdocument, page 331

Working with Sub-Page Content

Master documents, subdocuments, and Universal Content items can reside at the sub-page level, meaning that they don't start at the beginning of a page and end at the end of a page. You can have master page content and sub-page content on the same page. When using system variables and functions that use the document name (DocumentName, PageDocumentName), be aware that each page will be assigned the document name that was in effect at the beginning of the document. Master content is always in effect at the beginning of the first page of any master document.

Consider the following example: Your master document has two pages. The master page content starts page one. Universal Content (UC1) begins after the master content on page one. The Universal Content (UC1) continues onto page two. An additional Universal Content item (UC2) starts on page two after the first Universal Content item. Master content appears at the end of page two.



For page one, the PageDocumentName and DocumentName values will be as follows:

- PageDocumentName = Master
- DocumentName = Master

For page two, the PageDocumentName and DocumentName values will be as follows:

- PageDocumentName = UC1
- DocumentName = Master

About CurrentPage and TotalPage Functions

There are a few similarly named functions that have very different uses: CurrentPageIn (DocumentName), TotalPagesIn(DocumentName), CurrentPageInDocument, and TotalPagesInDocument. The CurrentPageInDocument and TotalPagesInDocument functions always refer to the master document.

The CurrentPageIn(DocumentName) and TotalPagesIn(DocumentName) functions enable you to define which document you are referring to. If you supply the master document name to these functions, it will refer to the master document. If you supply the name of a subdocument, Universal Content item, or external content item, the function will refer to the subdocument, Universal Content item, or external content item.

The following chart shows how the CurrentPage functions work in relation to one another:

```
MASTER DOCUMENT     CurrentPageIn(MASTER/Subdoc)  CurrentPageInDocument
pg1                           1/0                           1
pg2                           2/0                           2
  SubDocument begin
  pg3                         3/1                           3
  pg4                         4/2                           4
  SubDoc end
pg5                           5/0                           5
pg6                           6/0                           6
```

The following chart shows how the TotalPage functions work in relation to one another:

```
MASTER DOCUMENT     TotalPagesIn(MASTER/Subdoc)    TotalPagesInDocument
pg1                           6/2                           6
pg2                           6/2                           6
  SubDocument begin
  pg3                         6/2                           6
  pg4                         6/2                           6
  SubDoc end
pg5                           6/2                           6
pg6                           6/2                           6
```

Uniquely Identify Output

With the combination of the following system functions, you can create unique output file names: JobID, StreamNumber, PackageID, and DocumentID.

Example: Identifying Specific Pages

In this example, we want to place a content stamp on a specific page (page three) in the document. There are no subdocuments, Universal Content items, or external content items in the document.

```
CurrentPageIn("MyDoc") = 3
```

In this example we want to place the content stamp on a specific page of a subdocument in a master document. If the total number of pages for the master document is greater than 14, we want the content stamp on page three. If the total number of pages for the master document is less than or equal to 14, we want the content stamp on page two. In this case, you would create two conditions.

```
TotalPagesInPackage > 14 && PageDocumentName = "MySubdoc" &&
  CurrentPageIn("MyDoc") = 3

TotalPagesInPackage <= 14 && PageDocumentName = "MySubdoc" &&
  CurrentPageIn("MyDoc") = 2
```

Example: Detect Beginning and End of a Subdocument

If you have a master document that contains subdocuments, external content, or Universal Content, you can use the following examples to detect the beginning or end of the subdocument, external content, or Universal Content.

To detect the beginning of a subdocument:

```
CurrentPageIn("MySubDoc") = 1
```

To place a Content Stamp on the final page of a subdocument:

```
CurrentPageIn("MySubDoc") =  TotalPagesIn("MySubDoc")
```

Appendix B

System Function Definitions

This appendix describes the system functions you can use to define expressions in xAdmin through the Advanced Expression Entry feature. These functions may have corresponding function names available in the condition toolbar interface, but the names may not match exactly. The system functions without parameters are also called system variables. You can use document-level, package-level, partition-level, and stream-level system variables in DefaultMetaDataFormat.xml to output metadata.

You must select functions that are appropriate for your situation. Package-level totals are the only totals that are known at the beginning of a document, package, partition, or stream. For example, the TotalPagesInPartition function would not return meaningful data when used in a package. It would return meaningful data when used at the end of a partition-level separator sheet. Refer to Page and Document Condition Options, page 33 for general guidelines on function usage.

Some of the system functions require parameters to be specified along with the function. The parameters are contained with in parenthesis (()). For those functions that do not require parameters, ensure that you don't include parenthesis when you specify the function, as this will cause an error.

Definitions

This section lists all system functions you can use to create expressions and define conditions in xAdmin.

binaryBooleanData(*data*)

This function evaluates a piece of Boolean data as true or false and returns the corresponding binary string as "1" for true or "0" for false. The *data* parameter is an Output Processing expression that evaluates to a Boolean. This function is only available for use in the Advanced Expression Entry dialog.

For example, if generating an OMR bar code on a package that needs a bar set for the last page of a package, you define the following expression:

```
binaryBooleanData(CurrentPageInPackage = TotalPagesInPackage)
```

Which returns a string of "1" when on the last page, otherwise it returns "0".

binaryNumData(*data*, *width*)

This function converts a pries of numeric data to a binary string of a defined length, with the most significant bit on the left. The *data* parameter is an Output Processing expression that evaluates to a number (including a simple numeric output processing field). The *width* parameter is the number of characters of the resulting string, This function is only available for use in the Advanced Expression Entry dialog.

If *data* evaluates to a negative number, xPression uses the absolute value of the number. If *data* evaluates to a floating-point value, xPression truncates the number to the lower whole number before converting it to binary data. If *data* evaluates to a binary number greater than *width*, xPression truncates the higher order bits.

CurrentBookletSheetInPackage

This variable counts the number of sheets in a booklet imposition. It has an initial value of 1 and increments for each sheet in the imposition. The value is valid if the variable is referenced in the context of a 2Up booklet imposition. In any other context the variable value will be 0. This variable has been added to the Add Function element of the Data tab in Publish Output Management's Content Stamp Definition page. For Advanced Expression Entry this variable must be input by the user.

CurrentDate

The date functions allows you to conditionally include a document within your output based on a date parameter. For example, if you wanted to create documents whose legal effective date was the current date, then you could use a rule such as:

EffectiveDate = CurrentDate

This function returns a string representing the current date in the format YYYYMMDD. You can combine this function with the Year, Month, and Day functions to get the current year, month, or day only.

CurrentDateTime

This function returns a string representing the current date and time in the format yyyMMddHHmmss, as reported by the server hardware that xPression is running on.

CurrentDocumentInPackage

This function returns the number of the current document in the package.

CurrentDocumentInPartition

This function returns the number of current document being placed into the current partition.

CurrentDocumentInStream

This function returns the number of the current document being processed by xPression for the current stream.

CurrentTimeMilis

This xPublish function returns the current time in milliseconds.

CurrentImposedPagesInPartition

This function returns the number of the current imposed page being placed into the current partition.

CurrentImposedPagesInStream

This function returns the number of the current imposed page being written to the current stream.

CurrentImposedSheetsInPartition

This function returns the number of the current imposed sheet being placed into the current partition.

CurrentImposedSheetsInStream

This function returns the number of the current imposed sheet being placed into the current stream.

CurrentInsertedBlankPagesInDocument

This function returns the number of blank pages inserted into the document to ensure the next section starts on a recto page.

CurrentInsertedBlankPagesInPackage

This function returns the number of blank pages inserted into the package to ensure the next section starts on a recto page.

CurrentInsertedBlankPagesInPartition

This function returns the current number of blank pages inserted into the partition to ensure that the next section starts on a recto page.

CurrentInsertedBlankPagesInStream

This function returns the current number of blank pages inserted into the stream to ensure that the next section starts on a recto page.

CurrentPackageInPartition

This function returns the number of the current package being placed into the partition.

CurrentPackageInStream

This function returns the number of the current package being processed in the stream.

CurrentPageIncludeSimulateInDocument

This function returns the sum of regular pages in the document and blank pages inserted into the document to simulate simplex.

CurrentPageInDocument

This function returns the number of the current Master document page being processed by xPression for the document. For an example of how this function works, see About CurrentPage and TotalPage Functions, page 330.

CurrentPageIn(DocumentName)

This function enables you to determine the current page number for a master document, subdocument, Universal Content item, or external content item. When using this function, supply the document name in the parenthesis. If you supply the name of a master document, this function will return the current master document page number. If you define the name of a subdocument, Universal Content item, or external content item, this function will return the page number for the subdocument, Universal Content item, or external content item. For an example of how this function works, see About CurrentPage and TotalPage Functions, page 330.

CurrentPageInPackage

This function enables you to determine the current page number within a document (package). This might be used to determine whether special action should be taken. For example, in an insurance package, if a special bar code needs to be placed on the first page of the document, then you could use an expression such as:

CurrentPageInPackage(2) = 1

Page counting always starts with 1 on the recto side. Therefore, counting in recto mode returns the current number of odd pages and counting in verso mode returns the current number of even pages.

The *counting* parameter takes the following values:

Define 0 to count the recto sides of the paper only.

Define 1 to count the verso sides of the paper only.

Define 2 to count both the recto and verso sides of the paper.

If the current page is the first page, and you define the counting method as verso (1), the function returns 0, as no verso pages have been counted.

xPublish also provides separate functions to return recto and verso pages.

This function returns the current page number being processed by xPression in this package.

CurrentPageInPartition

This function returns the number of the current page being placed into the current partition.

CurrentPageInStream

This function returns the number of the current page being written to the current stream.

CurrentPageOrientation

This function determines the current page orientation. This allows you to perform such tasks as determine the proper orientation for a bar code to be placed on the page. For example, if the page in landscape format, and you need a landscape bar code, you could use the condition:

CurrentPageOrientation() = 2

This function returns a value indicating the orientation of the current page. For pages within a merge document, this function returns the orientation of the first page onto which the document was merged.

The return values are:

- 1 - portrait
- 2 - landscape
- 3 - inverse portrait
- 4 - inverse landscape

CurrentPlex

This xPublish function returns whether the current page is simplex or duplex.

CurrentRectoPageInDocument

This function returns the number of the current recto page being processed in the document.

CurrentRectoPageInPackage

This xPublish function returns the number of the current recto page being processed in the package.

CurrentRectoPageInPartition

This function returns the number of the current recto page being processed in the partition.

CurrentRectoPageInStream

This function returns the number of the current recto page being processed in the stream.

CurrentSeparatorSheetInPartition

This function returns the number of the current separator sheet being processed in the partition. If this function appears at the end of a partition, it returns the total number of separator sheets in the partition.

CurrentSeparatorSheetsInStream

This function returns the number of the current separator sheets being processed in the stream. If this function appears at the end of a stream, it returns the total number of separator sheets in the stream.

CurrentSheetInDocument

This function returns the number of the current sheet being processed in the document.

CurrentSheetInPackage

This xPublish function returns the number of the current sheet being processed in the package. It differs from the CurrentPageInPackage function in that it returns the physical number of sheets without regard for distribution of recto, verso, or phantom pages.

CurrentSheetInPartition

This function returns the number of current sheet being placed into the current partition.

CurrentSheetInStream

This function returns the number of the current sheet being written to the current stream.

CurrentStackInPartition

This function returns the number of current multiple imposition stack being placed into the current partition.

CurrentStackInStream

This function returns the number of current multiple imposition stack being written to the current stream.

CurrentStreamPlex

This function returns the plex mode of the current stream.

CurrentVersoPageInDocument

This function returns the number of the current verso page being processed in the document.

CurrentVersoPageInPackage

This xPublish function returns the number of the current verso page being processed in the package.

CurrentVersoPageInPartition

This function returns the number of the current verso page being added to the partition.

CurrentVersoPageInStream

This function returns the number of the current verso page being written to the current stream.

dateToString(*DateVariable*, *StringFormat*)

Returns a string representation of a Date. The *DateVariable* parameter must be a Date type variable. This function is only available for use in the Advanced Expression Entry dialog. This function can be used in a content stamp to output the date contained in a Date-type output variable in any supported format. For information on the supported formats, see Supported Date and Time Patterns, page 355.

DocumentID

Returns the ID of any DIF document.

DocumentItemID

Returns the ID of the Work in Progress (WIP) item in string format. WIP items are documents from xRevise, xResponse, or IDDK custom applications. The value is available in all places where a document is the subject of an expression.

DocumentName

Returns the document name in string format. It will always return the name of the master document, even if applied against a page that comes from a subdocument. To return the name of the subdocument in this case, use PageDocumentName instead.

getMediaDetails(*MediaMarkerName*)

This function returns the details of the media marker specified in the *MediaMarkerName* parameter. *MediaMarkerName* is a String-type parameter. If the media marker name is not valid, the function returns zero (0). This function is only available for use in the Advanced Expression Entry dialog. This function can be used in a content stamp for placement on a separator sheet so that the information is visible for someone such as a printer operator.

inString(*string1*, *string2*)

This function returns the offset if *string2* is found in *string1*. It returns –1 if *string2* is not found in *string1*. This function is only available for use in the Advanced Expression Entry dialog.

IsFirstPageOfPackage

Returns the value “true” if the current page is the first page in the package.

IsFirstRectoPageOfPackage

Returns the value “true” if the current page is the first recto page in the package.

IsFirstVersoPageOfPackage

Returns the value “true” if the current page is the first verso page in the package.

IsInsertedBlankPage

Returns the value “true” if the processor inserted this page to satisfy starting the package on a recto page. The value will be “false” unless the actual inserted blank page is being processed, for example, by a Page Condition for a content stamp, and the page is an inserted blank page.

IsLastDocumentOfPackage

Returns the value “true” if the current document is the last document in the package.

IsLastPageOfPackage

Returns the value “true” if the current page is the last page in the package.

IsLastVersoPageOfPackage

Returns the value “true” if the current page is the last verso page in the package.

IsLastRectoPageOfPackage

Returns the value “true” if the current page is the last recto page in the package.

IsRectoPage

Returns the value “true” if the current page is a recto (right-hand) page. For use with duplex and duplex-simulate simplex streams.

IsRectoImposedPage

This boolean variable indicates that the imposed page is recto when true. It is analogous to IsRectoPage, but is applicable when using imposition. It has been added to the Add Function element of the Page Condition section of Publish Output Management’s Content Stamp Definition page.

IsVersoPage

Returns the value “true” if the current page is a verso (left-hand) page. For us with duplex and duplex-simulate simplex streams.

IsVersoImposedPage

This boolean variable indicates that the imposed page is verso when true. It is analogous to IsVersoPage, but is applicable when using imposition. It has been added to the Add Function element of the Page Condition section of Publish Output Management’s Content Stamp Definition page.

JobID

Returns the Job ID of a batch job. This system variable is available to all expressions. If this variable is used where batch is not used for publishing, it will return a 0.

left(*string*, *integer*)

This function returns a substring of *integer* length. If *integer* is longer than the length of *string*, *string* will be returned as it is, and it will be shorter than *integer* in length. If *integer* is less than zero, it will be adjusted to zero. This function is only available for use in the Advanced Expression Entry dialog.

length(*string*)

This function returns the length of *string*. This function is only available for use in the Advanced Expression Entry dialog.

lpad(*string*, *padded_length*)

Returns the specified *padded_length* of *string*. *string* is the string to which you want to pad spaces (to the left-hand side). *padded_length* is the number of characters to return. If the *padded_length* is smaller than the original string, the lpad function truncates the string to the size of the *padded_length*, from the right side of the string. This function is only available for use in the Advanced Expression Entry dialog.

For example:

```
lpad('tech', 7)
```

Returns ’ tech’

```
lpad('tech', 2)
```

Returns ’te’

```
lpad('tech', 8)
```
Returns ’ tech’

mid(*string*, *integer*, *length*)

This function returns a string that begins at *integer* of *string* at the length *length*. If *integer* plus *length* is longer than *string*, the sting returned will be the remainder of the string. If *integer* or *length* is less than zero, they will be adjusted to zero. This function is only available for use in the Advanced Expression Entry dialog box.

Now

This function returns the current time in milliseconds.

numericToString(*data*, *width*, *decimals*)

This function converts a piece of numeric data to a string of a defined width. The *data* parameter is numeric (including a simple output processing field). The *width* parameter is the number of characters of the resulting string. This parameter can include the negative sign and decimal point, if applicable. The *decimals* parameter is the number of digits to the right of the decimal place in the resulting string. If *decimals* is zero (0), than xPression does not include the decimal point itself in the resulting string. This function returns a string exactly *width* characters long, with *decimals* number of decimal places. In addition, the resulting string contains leading and trailing zeros as needed to force the correct width and decimals.

If the width you define is not large enough to store the data, xPression removed the least significant decimal places, truncating the resulting data.

This function is only available for use in the Advanced Expression Entry dialog box.

Tip: If you want the result to be a rounded value, add the appropriate value to the data for rounding to occur in the expression. For example, if the data evaluates to three decimal places, and you want the result to have two decimal places, add .005 to the expression to round up the second decimal place.

numericToStringNoLeadingZeros(*data*, *decimals*)

This function converts a piece of numeric data to a string. The *data* parameter is numeric (including a simple output processing field). This parameter can include the negative sign and decimal point, if applicable. The *decimals* parameter is the number of digits to the right of the decimal place in the resulting string. If *decimals* is zero (0), than xPression does not include the decimal point itself in the resulting string.

This function is only available for use in the Advanced Expression Entry dialog box.

Tip: If you want the result to be a rounded value, add the appropriate value to the data for rounding to occur in the expression. For example, if the data evaluates to three decimal places, and you want the result to have two decimal places, add .005 to the expression to round up the second decimal place.

PackageID

Returns the ID of a package in a job.

packageMediaCounts(*MediaMarkerName*)

This function returns the number of sheets of media counted so far in the package for the media marker specified in the *MediaMarkerName* parameter. *MediaMarkerName* is a String-type parameter. If the media marker name is not valid, the function returns zero (0). This function is only available for use in the Advanced Expression Entry dialog. This function can be used in a content stamp for placement on a separator sheet so that the information is visible for someone such as a printer operator.

PageDocumentName

This system variable returns the name of the document, subdocument, external content item, or Universal Content item that contains the page on which the variable was applied. If applied to a page in the master document, this system variable will return the name of the master document. If applied to a page in a subdocument, external content item, or Universal Content item, this system variable will return the name of the subdocument, external content item, or Universal Content item.

When this system variable is used for a job where the xPression DevKit used the AddExternalContentByStream Web Service to add external content, then this system variable will not return the document name, it will return the stream number.

If your document contains xPublish subdocuments, this system variable will only return the name of the subdocument if the subdocument uses the Retain Page Number option. You must use a continuous section break before a subdocument when using the Retain Page Number option; otherwise, values returned by this system variable might be wrong. If you cannot use the Retain Page Number option and want to return the subdocument name, you can use a Universal Content item instead of a subdocument to successfully return the Universal Content name. If your xPublish subdocument does not use the Retain Page Number option, this system variable will return the master document name.

See Best Practices, page 328 for more information about using this system variable.

partitionMediaCounts(*MediaMarkerName*)

This function returns the number of sheets of media counted so far in the partition for the media marker specified in the *MediaMarkerName* parameter. *MediaMarkerName* is a String-type parameter. If the media marker name is not valid, the function returns zero (0). This function is only available

for use in the Advanced Expression Entry dialog. This function can be used in a content stamp for placement on a separator sheet so that the information is visible for someone such as a printer operator. This function is best used at the end of a partition where it can report the total number of sheets. If used earlier in the partition, it will report the current number of sheets used, which may be different than the total number used.

PartitionNo

This function returns number of the current partition being processed.

PartitionOutputFileName

This function returns the output file name of the current partition.

right(*string*, *integer*)

This function returns a substring of *integer* length from the right side of *string*, If *integer* is longer then the length of *string*, the whole of *string* will be returned and will be less in length then *integer*. If *integer* is less then zero (0), it will be adjusted to zero. This function is only available for use in the Advanced Expression Entry dialog.

rpad(*string*, *padded_length*)

Returns the specified *padded_length* of *string*. *string* is the string to which you want to pad spaces (to the right-hand side). *padded_length* is the number of characters to return. If the *padded_length* is smaller than the original string, the rpad function truncates the string to the size of the *padded_length*, from the right side of the string. This function is only available for use in the Advanced Expression Entry dialog.

For example:

```
rpad('tech', 7)
```

Returns 'tech '

```
rpad('tech', 2)
```

Returns 'te'

streamMediaCounts(*MediaMarkerName*)

This function returns the number of sheets of media counted in the stream for the media marker specified in the *MediaMarkerName* parameter. *MediaMarkerName* is a String-type parameter. If the media marker name is not valid, the function returns zero (0). This function is only available for use

in the Advanced Expression Entry dialog. This function can be used in a content stamp for placement on a separator sheet so that the information is visible for someone such as a printer operator. This function is best used at the end of a stream where it can report the total number of sheets. If used earlier in the stream, it will report the current number of sheets used, which may be different than the total number used.

Stream Number

This system variable identifies which stream in the Publish Profile that a particular document originated from. See Uniquely Identify Output, page 330 for more information about using this system function.

TotalBlankPagesInsertedInDocument

This function returns the total number of blank pages that have been inserted into the current document.

TotalBlankPagesInsertedInPackage

This function returns the total number of blank pages inserted into the current package.

TotalBlankPagesInsertedInPartition

This function returns the total number of blank pages inserted into the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of blank pages instead.

TotalBlankPagesInsertedInStream

This function returns the total number of blank pages inserted into the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of blank pages instead.

TotalBookletSheetsInPackage

This variable reports the total number of sheets used in the imposition. This variable has been added to the Add Function element of the Data tab in Publish Output Management's Content Stamp Definition page. For Advanced Expression Entry this variable must be input by the user.

TotalImposedPagesInPartition

This function returns the total number of imposed pages placed into the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of imposed pages instead.

TotalImposedPagesInStream

This function returns the total number of imposed pages placed in the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of imposed pages instead.

TotalImposedSheetsInPartition

This function returns the total number of imposed sheets placed in the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of imposed pages instead.

TotalImposedSheetsInStream

This function returns the total number of imposed sheets placed in the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of imposed pages instead.

TotalPackageThickness

This function returns the total thickness in millimeters of the sheets used in the current package. The TotalPackageThickness function enables you to conditionally include a document within your output based on the thickness of the document. This is often used to separate a stream into different files in order to accommodate finishing equipment. For example, in a run of 10,000 customers, some documents might have too many pages (i.e. too great of thickness) for the finishing equipment to handle. Those documents might require a manual process. In that case, we would use an expression such as:

TotalPackageThickness <= 2

where "2" is the thickness in millimeters.

TotalPackageWeight

This function returns the weight in grams of the paper in the package. The TotalPackageWeight function enables you to conditionally include a document within your output stream based on the weight of the document. This is often used to separate a stream into different files in order to accommodate mailing costs. For example, in a run of 10,000 customers, some customers might have documents that exceed N grams in weight, where N is a specified number in the inclusion condition. Those documents might require a manual process or a different mailing process due to the weight. In that case, we would use an expression such as:

TotalPackageWeight <= 20

where "20" is the weight in grams.

TotalPagesInDocument

This function returns the total number of pages processed by xPression for the current document. For an example of how this function works, see About CurrentPage and TotalPage Functions, page 330.

TotalPagesIn(DocumentName)

This function enables you to determine the number of total pages for a master document, subdocument, Universal Content item, or external content item. When using this function, supply the document name in the parenthesis. If you supply the name of a master document, this function will return the total number of pages in the master document. If you define the name of a subdocument, Universal Content item, or external content item, this function will return the total number of pages for the subdocument, Universal Content item, or external content item. For an example of how this function works, see About CurrentPage and TotalPage Functions, page 330.

TotalPagesInPackage

This function returns the total number of pages processed in the current package.

TotalPagesInStream

This function return the total number of pages processed in the stream. This function is only valid at the end of a stream; if it occurs earlier, it will return the current number of pages instead. The return value doesn't include any separator sheets contained in the stream. To find that total number of pages including separator sheets, combine this function with CurrentSeparatorSheetsInStream.

TotalPagesInPartition

This function returns the total number of pages processed in the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of pages instead. The return value doesn't include any separator sheets contained in the partition. To find that total number of pages including separator sheets, combine this function with CurrentSeparatorSheetInPartition.

TotalPartitionsInStream

This function returns the total number of partitions in the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of partitions instead.

TotalRectoImposedPagesInPartition

This function returns the total number of imposed recto pages placed in the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of recto imposed pages instead.

TotalRectoImposedPagesInStream

This function returns the total number of imposed recto pages placed in the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of recto imposed pages instead.

TotalRectoPagesInDocument

This function returns the total number of recto pages processed by xPression for the current document.

TotalRectoPagesInPackage

This function returns the total number of recto pages processed by xPression for the current package. The result of this function can be compared to a literal value, variable, or the result of another function.

TotalRectoPagesInPartition

This function returns the total number of recto pages processed by xPression for the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of recto pages instead.

TotalRectoPagesInStream

This function returns the total number of recto pages processed by xPression in the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of recto pages instead.

TotalSeparatorSheetsInPartition

This function returns the total number of separator sheets that have been placed in the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of separator sheets instead.

TotalSeparatorSheetsInStream

This function returns the total number of separator sheets in the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of separator sheets instead.

TotalSheetsInDocument

This function returns the total number of sheets processed by xPression for the current document. It differs from the Total Page functions in that it provides the physical number of sheets in the document without regard to the distribution of recto, verso, and phantom pages. Use this function when you need to identify documents that require special handling due to the number of sheets that they use.

TotalSheetsInPackage

This function returns the total number of sheets processed by xPression in the current package. It differs from the Total Page functions in that it provides the physical number of sheets in the package without regard to the distribution of recto, verso, and phantom pages. Use this function when you need to identify packages that require special handling due to the number of sheets that they use.

TotalSheetsInPartition

This function returns the total number of sheets processed by xPression in the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of sheets instead. It differs from the Total Page functions in that it provides the physical number of sheets in the partition without regard to the distribution of recto, verso, and phantom pages. Use this function when you need to identify partitions that require special handling due to the number of sheets that they use. The return value doesn't include any separator sheets contained in the partition. To find that total number of sheets including separator sheets, combine this function with CurrentSeparatorSheetInPartition.

TotalSheetsInStream

This function returns the total number of sheets processed by xPression in the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of sheets instead. It differs from the Total Page functions in that it provides the physical number of sheets in the stream without regard to the distribution of recto, verso, and phantom pages. Use this function when you need to identify streams that require special handling due to the number of sheets that they use. The return value doesn't include any separator sheets contained in the stream. To find that total number of sheets including separator sheets, combine this function with CurrentSeparatorSheetsInStream.

TotalSimulateBlankPagesInsertedInDocument

This function returns the total number of blank pages inserted into the document to simulate simplex.

TotalSimulateBlankPagesInsertedInPackage

This function returns the total number of blank pages inserted into the package to simulate simplex mode.

TotalSimulateBlankPagesInsertedInPartition

This function returns the total number of blank pages inserted into the partition to simulate simplex mode. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of simulate blank pages instead.

TotalSimulateBlankPagesInsertedInStream

The total number of blank pages inserted into the stream to simulate simplex mode. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of simulate blank pages instead.

TotalStackInPartition

This function returns the total number of multiple imposition stacks in the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of multiple imposition stacks instead.

TotalStackInStream

This function returns the total number of multiple imposition stacks in the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of multiple imposition stacks instead.

TotalVersoImposedPagesInPartition

This function returns the total number of imposed verso pages in the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of verso imposed pages instead.

TotalVersoImposedPagesInStream

This function returns the total number of imposed verso pages in the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of verso imposed pages instead.

TotalVersoPagesInDocument

This function returns the total number of verso pages processed by xPression for the current document.

TotalVersoPagesInPackage

This function returns the total number of verso pages processed by xPression for the current package. The result of this function can be compared to a literal value, variable, or the result of another function.

TotalVersoPagesInPartition

This function returns the total number of verso pages processed by xPression in the current partition. This function is only valid at the end of the partition; if it occurs earlier, it will return the current number of verso pages instead.

TotalVersoPagesInStream

This function returns the total number of verso pages processed by xPression in the current stream. This function is only valid at the end of the stream; if it occurs earlier, it will return the current number of verso pages instead.

UniqueNumber

This function returns a unique number in a JVM run. It can be used to uniquely name files when necessary.

UserName

This variable indicates the user name of the user who currently has responsibility for, or “owns” a Work in Progress (WIP) item. WIP items are documents from xRevise, xResponse, or IDDK custom applications. The value of UserName is an empty string (””) for documents that are not from WIP items. The value is available in all places where a document is the subject of an expression including, but not limited to, content stamps, conditions, metadata, and output filename. At the Document level, the value of UserName is included in the metadata (generic index) in each case where the value is not the empty string.

Because no user has responsibility for a completed work item, this variable does not apply to completed work items. Since xBatch runs completed work items only, this variable is not available for xBatch. However, non-completed work items can be published as Queue for Batch, and in this case UserName will be available. Applications that can publish non-completed work items, such as xRevise and custom applications created with IDDK, can access this variable.

Supported Date and Time Patterns

Date and time formats are specified by date and time pattern strings, within which, unquoted letters from 'A' to 'Z' and from 'a' to 'z' are interpreted as pattern letters representing the date string. Text can be quoted using single quotes wrapped in double quotes ("' '") to avoid interpretation. All other characters are copied into the output string during formatting, or matched against the input string during parsing.

Note: Date and time patterns are only supported for use in the dateToString function. For more information, see dateToString(*DateVariable, StringFormat*), page 340.

The following pattern letters are defined (all other characters form 'A' to 'Z' and from 'a' to 'z' are reserved).

Letter	Date or Time Component	Presentation	Examples
G	Era designator	Text	AD
y	Year	Year	1996; 96
M	Month in year	Month	July; Jul; 07
w	Week in year	Number	27
W	Week in month	Number	2
D	Day in year	Number	189
d	Day in month	Number	10
F	Day of week in month	Number	2
E	Day in week	Text	Tuesday; Tue
a	Am/pm marker	Text	PM
H	Hour in day (0–23)	Number	0
k	Hour in day (1–24)	Number	24
K	Hour in am/pm (0–11)	Number	0
h	Hour in am/pm (1–12)	Number	12
m	Minute in hour	Number	30
s	Second in minute	Number	55
S	Millisecond	Number	978
z	Time zone	General time zone	Pacific Standard Time; PST; GMT-08:00
Z	Time zone	RFC 822 time zone	-0800

Pattern letters are repeated to specify the exact presentation:

- **Text:** If the number of pattern letters are 4 or more, the full forms is used; otherwise a short or abbreviated form is used if available.
- **Number:** The number of pattern letters is the minimum number of digits, and shorter numbers are zero-padded to this amount.
- **Year:** If the number of pattern letters is 2, the year is truncated to 2 digits; otherwise it is processed as a number.

- **Month:** If the number of pattern letters is 3 or more, the month is processed as text; otherwise, it is processed as a number.
- **General time zone:** Time zones are processed as text if they have names. For time zones representing a GMT offset value, the following syntax is used (and is locale independent):

`GMT` *`Sign Hours : Minutes`*

Where:

Sign is either + (plus) or – (minus).

Hours is represented by a *Digit* or *Digit Digit* pattern, and must be between 0 and 23.

Minutes is represented by a *Digit Digit* pattern, and must be between 00 and 59.

Digit is a number from 0–9, and must be from the Basic Latin block of Unicode.

- **RFC 822 time zone:** The RFC 822 4–digit time zone format is used:

`Sign TwoDigitHours Minutes`

Where:

Sign is either + (plus) or – (minus).

TwoDigitHours is represented by a *Digit Digit* pattern, and must be between 00 and 23.

Minutes is represented by a *Digit Digit* pattern, and must be between 00 and 59.

Digit is a number from 0–9, and must be from the Basic Latin block of Unicode.

Note: Localized date and time pattern strings are also supported. The pattern letters detailed previously can be replaced with other, locale dependent, pattern letters.

Examples

The following examples show how date and time patterns are processed in the U.S. locale. For each example, the date and time are 2001–07–04 12:08:56 local time in the U.S. Pacific Time time zone.

Date and Time Pattern	Result
“yyy.MM.dd G ’at’ HH:mm:ss z”	2001.07.04 AD at 12:08:56 PDT
“EEE, MMM d, ’ ’yy”	Wed, Jul 4, ’01
“h:mm a”	12:08 PM
“hh ’o’ ’clock’ a, zzzz”	12 o’clock PM, Pacific Daylight Time
“K:mm a, z”	0:08 PM, PDT
“yyyyy.MMMMM.dd GGG hh:mm aaa”	02001.July.04 AD 12:08 PM
“EEE, d MMM yyyy HH:mm:ss Z”	Wed, 4 Jul 2001 12:08:56 –0700
“yyMMddHHmmssZ”	010704120856–0700